MITSUBISHI ELECTRIC

MOTION CONTROLLERS

MOTION CONTROLLER

MT Developer2
Version 1

Setup Guidance

● SAFETY PRECAUTIONS ●

(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly. The precautions given in this manual are concerned with this product only. Refer to the user's manual of the CPU module to use for a description of the PLC system safety precautions. In this manual, the safety precautions are classified into two levels: "WARNING" and "CAUTION".

⚠WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "CAUTION" may lead to serious consequences.
Observe the precautions of both levels because they are important for personal and system safety.
Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

For Safe Operations
[Design Precautions]

⚠WARNING

- Configure safety circuits external to the programmable controller to ensure that the entire system operates safely even when a fault occurs in the external power supply or the programmable controller.
  Failure to do so may result in an accident due to an incorrect output or malfunction.
  (1) Configure external safety circuits, such as an emergency stop circuit, protection circuit, and protective interlock circuit for forward/reverse operation or upper/lower limit positioning.
  (2) The programmable controller stops its operation upon detection of the following status, and the output status of the system will be as shown below.
    • Turned off if the overcurrent or overvoltage protection of the power supply module is activated.
    • Held or turned off according to the parameter setting if the self-diagnostic function of the CPU module detects an error such as a watchdog timer error.
  (3) Also, all outputs may be turned on if an error occurs in a part, such as an I/O control part, where the CPU module cannot detect any error. To ensure safety operation in such a case, provide a safety mechanism or a fail-safe circuit external to the programmable controller. For a fail-safe circuit example, refer to the user's manual of the CPU module to use.
  (4) Outputs may remain on or off due to a failure of a component such as a relay and transistor in an output circuit. Configure an external circuit for monitoring output signals that could cause a serious accident.
- In an output circuit, when a load current exceeding the rated current or an overcurrent caused by a load short circuit flows for a long time, it may cause smoke and fire.
  To prevent this, configure an external safety circuit, such as a fuse.
- Configure a circuit so that the programmable controller is turned on first and then the external power supply. If the external power supply is turned on first, an accident may occur due to an incorrect output or malfunction.
- For the operating status of each station after a communication failure, refer to manuals relevant to the network. Incorrect output or malfunction due to a communication failure may result in an accident.
- When connecting an external device with a CPU module or intelligent function module to modify data of a running programmable controller, configure an interlock circuit in the program to ensure that the entire system will always operate safely. For other forms of control (such as program modification, parameter change, forced output, or operating status change) of a running programmable controller, read the relevant manuals carefully and ensure that the operation is safe before proceeding. Improper operation may damage machines or cause accidents.
- Especially, when a remote programmable controller is controlled by an external device, immediate action cannot be taken if a problem occurs in the programmable controller due to a communication failure. To prevent this, configure an interlock circuit in the program, and determine corrective actions to be taken between the external device and CPU module in case of a communication failure.

⚠WARNING

- Do not write any data to the "system area" and "write-protect area" of the buffer memory in the module. Also, do not use any "use prohibited" signals as an output signal from the CPU module to each module. Doing so may cause malfunction of the programmable controller system. For the "system area", "write-protect area", and the "use prohibited" signals, refer to the user's manual for the module used.
- If a communication cable is disconnected, the network may be unstable, resulting in a communication failure of multiple stations. Configure an interlock circuit in the program to ensure that the entire system will always operate safely even if communications fail. Failure to do so may result in an accident due to an incorrect output or malfunction.
- To maintain the safety of the programmable controller system against unauthorized access from external devices via the network, take appropriate measures. To maintain the safety against unauthorized access via the Internet, take measures such as installing a firewall.
- Configure safety circuits external to the programmable controller to ensure that the entire system operates safely even when a fault occurs in the external power supply or the programmable controller.

  Failure to do so may result in an accident due to an incorrect output or malfunction.

  (1) Machine home position return is controlled by two kinds of data: a home position return direction and a home position return speed. Deceleration starts when the near-point dog signal turns on. If an incorrect home position return direction is set, motion control may continue without deceleration. To prevent machine damage caused by this, configure an interlock circuit external to the programmable controller.

  (2) When the module detects an error, the motion slows down and stops or the motion suddenly stops, depending on the stop group setting in parameter. Set the parameter to meet the specifications of a positioning control system. In addition, set the home position return parameter and positioning data within the specified setting range.

  (3) Outputs may remain on or off, or become undefined due to a failure of a component such as an insulation element and transistor in an output circuit, where the module cannot detect any error. In a system that the incorrect output could cause a serious accident, configure an external circuit for monitoring output signals.
- If safety standards (ex., robot safety rules, etc.,) apply to the system using the module, servo amplifier and servomotor, make sure that the safety standards are satisfied.
- Construct a safety circuit externally of the module or servo amplifier if the abnormal operation of the module or servo amplifier differs from the safety directive operation in the system.
- Do not remove the SSCNET Ⅲ cable while turning on the control circuit power supply of Multiple CPU system and servo amplifier. Do not see directly the light generated from SSCNET Ⅲ connector of the module or servo amplifier and the end of SSCNET Ⅲ cable. When the light gets into eyes, you may feel something wrong with eyes. (The light source of SSCNET Ⅲ complies with class1 defined in JISC6802 or IEC60825-1.)

[Design Precautions]

⚠CAUTION

- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100 mm or more between them. Failure to do so may result in malfunction due to noise.
- During control of an inductive load such as a lamp, heater, or solenoid valve, a large current (approximately ten times greater than normal) may flow when the output is turned from off to on. Therefore, use a module that has a sufficient current rating.
- After the CPU module is powered on or is reset, the time taken to enter the RUN status varies depending on the system configuration, parameter settings, and/or program size.
  Design circuits so that the entire system will always operate safely, regardless of the time.
- Do not power off the programmable controller or do not reset the CPU module during the setting registration. Doing so will make the data in the flash ROM undefined. The data need to be set in the buffer memory and to be written to the flash ROM again. Doing so may cause malfunction or failure of the module.
- Reset the CPU module after changing the parameters. Failure to do so may cause malfunction because the previous parameter settings remain in the module.
- When changing the operating status of the CPU module from external devices (such as remote RUN/STOP), select "Do Not Open by Program" for "Opening Method" in the module parameters. If "Open by Program" is selected, an execution of remote STOP causes the communication line to close.
  Consequently, the CPU module cannot reopen the communication line, and external devices cannot execute the remote RUN.

[Installation Precautions]

⚠WARNING

- Shut off the external power supply (all phases) used in the system before mounting or removing the module. Failure to do so may result in electric shock or cause the module to fail or malfunction.

[Installation Precautions]

⚠CAUTION

- Use the programmable controller in an environment that meets the general specifications in the manual "Safety Guidelines" included in the base unit. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
- To mount a module, place the concave part(s) located at the bottom onto the guide(s) of the base unit, and push in the module until the hook(s) located at the top snaps into place. Incorrect mounting may cause malfunction, failure, or drop of the module.
- When using the programmable controller in an environment of frequent vibrations, fix the module with a screw.
- Tighten the screws within the specified torque range. Undertightening can cause drop of the screw, short circuit, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
- When using an extension cable, connect it to the extension cable connector of the base unit securely. Check the connection for looseness. Poor contact may cause incorrect input or output.
- When using an SD memory card, fully insert it into the memory card slot. Check that it is inserted completely. Poor contact may cause malfunction.
- Securely insert an extended SRAM cassette into the cassette connector of a CPU module. After insertion, close the cassette cover and check that the cassette is inserted completely. Poor contact may cause malfunction.
- Do not directly touch any conductive parts and electronic components of the module, SD memory card, extended SRAM cassette, or connector. Doing so may cause malfunction or failure of the module.

[Wiring Precautions]

⚠WARNING

- Shut off the external power supply (all phases) used in the system before installation and wiring. Failure to do so may result in electric shock or damage to the product.
- After installation and wiring, attach the included terminal cover to the module before turning it on for operation. Failure to do so may result in electric shock.

[Wiring Precautions]

⚠CAUTION

- Individually ground the FG and LG terminals of the programmable controller with a ground resistance of 100 ohm or less. Failure to do so may result in electric shock or malfunction.
- Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Check the rated voltage and signal layout before wiring to the module, and connect the cables correctly. Connecting a power supply with a different voltage rating or incorrect wiring may cause fire or failure.
- Connectors for external devices or coaxial cables must be crimped or pressed with the tool specified by the manufacturer, or must be correctly soldered. Incomplete connections may cause short circuit, fire, or malfunction.
- Securely connect the connector to the module. Poor contact may cause malfunction.
- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100 mm or more between them. Failure to do so may result in malfunction due to noise.
- Place the cables in a duct or clamp them. If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cables or malfunction due to poor contact. Do not clamp the extension cables with the jacket stripped.
- Check the interface type and correctly connect the cable. Incorrect wiring (connecting the cable to an incorrect interface) may cause failure of the module and external device.
- Tighten the terminal screws or connector screws within the specified torque range. Undertightening can cause drop of the screw, short circuit, fire, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, fire, or malfunction.
- When disconnecting the cable from the module, do not pull the cable by the cable part. For the cable with connector, hold the connector part of the cable. For the cable connected to the terminal block, loosen the terminal screw. Pulling the cable connected to the module may result in malfunction or damage to the module or cable.
- Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.
- A protective film is attached to the top of the module to prevent foreign matter, such as wire chips, from entering the module during wiring. Do not remove the film during wiring. Remove it for heat dissipation before system operation.
- Mitsubishi programmable controllers must be installed in control panels. Connect the main power supply to the power supply module in the control panel through a relay terminal block. Wiring and replacement of a power supply module must be performed by qualified maintenance personnel with knowledge of protection against electric shock. For wiring, refer to the MELSEC iQ-R Module Configuration Manual.

[Wiring Precautions]

⚠CAUTION

- For Ethernet cables to be used in the system, select the ones that meet the specifications in the MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup). If not, normal data transmission is not guaranteed.

[Startup and Maintenance Precautions]

⚠WARNING

- Do not touch any terminal while power is on. Doing so will cause electric shock or malfunction.
- Correctly connect the battery connector. Do not charge, disassemble, heat, short-circuit, solder, or throw the battery into the fire. Also, do not expose it to liquid or strong shock. Doing so may cause the battery to generate heat, explode, ignite, or leak, resulting in injury or fire.
- Shut off the external power supply (all phases) used in the system before cleaning the module or retightening the terminal screws, connector screws, or module fixing screws. Failure to do so may result in electric shock or cause the module to fail or malfunction.

[Startup and Maintenance Precautions]

⚠CAUTION

- When connecting an external device with a CPU module or intelligent function module to modify data of a running programmable controller, configure an interlock circuit in the program to ensure that the entire system will always operate safely. For other forms of control (such as program modification, parameter change, forced output, or operating status change) of a running programmable controller, read the relevant manuals carefully and ensure that the operation is safe before proceeding. Improper operation may damage machines or cause accidents.
- Especially, when a remote programmable controller is controlled by an external device, immediate action cannot be taken if a problem occurs in the programmable controller due to a communication failure. To prevent this, configure an interlock circuit in the program, and determine corrective actions to be taken between the external device and CPU module in case of a communication failure.
- Do not disassemble or modify the modules. Doing so may cause failure, malfunction, injury, or a fire.
- Use any radio communication device such as a cellular phone or PHS (Personal Handyphone System) more than 25 cm away in all directions from the programmable controller.
  Failure to do so may cause malfunction.
- Shut off the external power supply (all phases) used in the system before mounting or removing the module. Failure to do so may cause the module to fail or malfunction.

[Startup and Maintenance Precautions]

⚠CAUTION

- Tighten the screws within the specified torque range. Undertightening can cause drop of the component or wire, short circuit, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
- After the first use of the product, do not mount/remove the module to/from the base unit, and the terminal block to/from the module, and do not insert/remove the extended SRAM cassette to/from the CPU module more than 50 times (IEC 61131-2 compliant) respectively.
  Exceeding the limit of 50 times may cause malfunction.
- After the first use of the product, do not insert/remove the SD memory card to/from the CPU module more than 500 times. Exceeding the limit may cause malfunction.
- Do not touch the metal terminals on the back side of the SD memory card. Doing so may cause malfunction or failure.
- Do not touch the integrated circuits on the circuit board of an extended SRAM cassette.
  Doing so may cause malfunction or failure.
- Do not drop or apply shock to the battery to be installed in the module. Doing so may damage the battery, causing the battery fluid to leak inside the battery.
  If the battery is dropped or any shock is applied to it, dispose of it without using.
- Startup and maintenance of a control panel must be performed by qualified maintenance personnel with knowledge of protection against electric shock. Lock the control panel so that only qualified maintenance personnel can operate it.
- Before handling the module, touch a conducting object such as a grounded metal to discharge the static electricity from the human body.
  Failure to do so may cause the module to fail or malfunction.
- Before testing the operation, set a low speed value for the speed limit parameter so that the operation can be stopped immediately upon occurrence of a hazardous condition.
- Confirm and adjust the program and each parameter before operation.
  Unpredictable movements may occur depending on the machine.
- When using the absolute position system function, on starting up, and when the module or absolute value motor has been replaced, always perform a home position return.
- Before starting the operation, confirm the brake function.
- Do not perform a megger test (insulation resistance measurement) during inspection.
- After maintenance and inspections are completed, confirm that the position detection of the absolute position detection function is correct.
- Lock the control panel and prevent access to those who are not certified to handle or install electric equipment.

[Operating Precautions]

⚠CAUTION

- When changing data and operating status, and modifying program of the running programmable controller from an external device such as a personal computer connected to an intelligent function module, read relevant manuals carefully and ensure the safety before operation. Incorrect change or modification may cause system malfunction, damage to the machines, or accidents.
- Do not power off the programmable controller or reset the CPU module while the setting values in the buffer memory are being written to the flash ROM in the module. Doing so will make the data in the flash ROM undefined. The values need to be set in the buffer memory and written to the flash ROM again. Doing so also can cause malfunction or failure of the module.
- Note that when the reference axis speed is specified for interpolation operation, the speed of the partner axis (2nd, 3rd, or 4th axis) may exceed the speed limit value.
- Do not go near the machine during test operations or during operations such as teaching. Doing so may lead to injuries.

[Disposal Precautions]

⚠CAUTION

- When disposing of this product, treat it as industrial waste.
- When disposing of batteries, separate them from other wastes according to the local regulations. For details on battery regulations in EU member states, refer to the MELSEC iQ-R Module Configuration Manual.

[Transportation Precautions]

⚠CAUTION

- When transporting lithium batteries, follow the transportation regulations. For details on the regulated models, refer to the MELSEC iQ-R Module Configuration Manual.
- The halogens (such as fluorine, chlorine, bromine, and iodine), which are contained in a fumigant used for disinfection and pest control of wood packaging materials, may cause failure of the product.
  Prevent the entry of fumigant residues into the product or consider other methods (such as heat treatment) instead of fumigation.
  The disinfection and pest control measures must be applied to unprocessed raw wood.

REVISIONS

The manual number is given on the bottom left of the back cover.

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CONTENTS

SAFETY PRECAUTIONS ····· A- 1
REVISIONS ····· A-10
CONTENTS ····· A-12
ABOUT MANUALS ····· A-14

1. OVERVIEW ····· 1- 1 to 1-2

1.1 Overview ····· 1- 1
1.2 Features ····· 1- 2

2. OPERATING ENVIRONMENT ····· 2- 1 to 2- 3

2.1 Operating Environment ····· 2- 1
2.2 Use Conditions ····· 2- 2

3. SYSTEM CONFIGURATION ····· 3- 1 to 3- 8

3.1 System Configuration ····· 3- 1
3.1.1 When using R32MTCPU/R16MTCPU ····· 3- 1
3.1.2 When using Q173D(S)CPU/Q172D(S)CPU/Q170MSCPU/Q170MSCPU-S1/Q170MCPU ·· 3- 2
3.1.3 When using Q173HCPU/Q172HCPU/Q173CPU(N)/Q172CPU(N) ····· 3- 3
3.2 Component List ····· 3- 8

4. SETTING THE SSC INTERFACE BOARD ····· 4- 1 to 4- 2

4.1 Setting the A10BD-PCF Interface Board ····· 4- 1

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE ····· 5- 1 to 5-19

5.1 USB Driver Installation Procedure ····· 5- 1
5.1.1 Precautions for using USB communication in Windows® XP ····· 5- 1
5.1.2 Precautions for using USB communication in Windows Vista® ····· 5- 3
5.1.3 Precautions for using USB communication in Windows® 7/Windows® 8/Windows® 8.1 ····· 5- 6
5.2 Updating the USB Driver ····· 5-10
5.3 SSCNET Driver Installation Procedure ····· 5-14
5.3.1 Precautions for using SSCNET communication in Windows® XP ····· 5-14
5.3.2 Precautions for using SSCNET communication in Windows Vista® ····· 5-15
5.3.3 Precautions for using SSCNET communication in Windows® 7 ····· 5-16
5.3.4 Precautions for using SSCNET communication in Windows® 8/Windows® 8.1 ····· 5-16

6. PRECAUTIONS ····· 6- 1 to 6-1

6.1 Uninstallation of SW6RN-SNETP or SW3RN-SNETP ····· 6- 1
6.2 Finding Ethernet Built-in Type CPU on the Network ····· 6- 1

7. TROUBLESHOOTING ····· 7- 1 to 7-20

7.1 During USB Communication, Communication Error Occurred and Communication Is Not Recovered from Error ····· 7- 1
7.2 Project Cannot Be Saved or Read ····· 7- 1
7.3 Sampling Omission May Occur on the Digital Oscilloscope ····· 7- 2
7.4 Digital Oscilloscope Cannot Be Started ····· 7- 3

7.5 The SSCNET Communication Manager of SW6RN-SNETP Displays "Shared Memory Connection Error" ····· 7- 3
7.6 During Communication, "Can not allocate Share memory" Error Occurs ····· 7- 4
7.7 When SW3RN-SNETP is Started, "Not enough memory" Error Occurs ····· 7- 4
7.8 During USB Communication, the USB Driver Cannot Be Installed or Communication Error Occurs ····· 7- 5
7.9 USB communication fails with Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1 ····· 7- 6
7.10 MR Configurator Fails to Be Started from MT Developer2 (Linkage Function) ····· 7-12
7.11 Operation when Using a Program Data, Created with the Japanese Edition in the English Edition ····· 7-13
7.12 When Installation does not Complete or Warning Dialog Boxes are Displayed ····· 7-14
7.13 A Dialog Box is Displayed after an Installer ····· 7-16
7.14 When the TCP/IP Communication cannot be Established or the Simulation Function cannot be Started ····· 7-17
7.15 Start the Unexpected Auxiliary Screen in MT Developer2 ····· 7-20

APPENDICES ····· APP- 1 to APP-5

APPENDIX 1 Added Functions ····· APP- 1

TRADEMARKS
WARRANTY

ABOUT MANUALS

The following manuals are related to this product.
Referring to this list, please request the necessary manuals.

Related Manuals

Motion controller

Manual Name	Manual Number (Model Code)
MELSOFT MT Works2 Installation Instructions This document explains how to install and uninstall MT Developer2.	___
MELSEC iQ-R Motion Controller User's Manual This manual explains specifications of the Motion CPU modules, SSCNET III cables and Synchronous encoder, and trouble shooting and others.	IB-0300235 (1XB002)
MELSEC iQ-R Motion Controller Programming Manual (Common) This manual explains the Multiple CPU system configuration, performance specifications, common parameters, auxiliary/applied functions, error lists and others.	IB-0300237 (1XB004)
MELSEC iQ-R Motion Controller Programming Manual (Program Design) This manual explains the functions, programming, debugging, error lists for Motion SFC and others.	IB-0300239 (1XB006)
MELSEC iQ-R Motion Controller Programming Manual (Positioning Control) This manual explains the servo parameters, positioning instructions, device lists, error lists and others.	IB-0300241 (1XB008)
MELSEC iQ-R Motion Controller Programming Manual (Advanced Synchronous Control) This manual explains the dedicated instructions to use the synchronous control by synchronous control parameters, device lists, error lists and others.	IB-0300243 (1XB010)
Q173D(S)CPU/Q172D(S)CPU Motion controller User's Manual This manual explains specifications of the Motion CPU modules, Q172DLX Servo external signal interface module, Q172DEX Synchronous encoder interface module, Q173DPX Manual pulse generator interface module, Power supply modules, Servo amplifiers, SSCNET III cables and Synchronous encoder, and the maintenance/inspection for the system, trouble shooting and others.	IB-0300133 (1XB927)
Q170MSCPU Motion controller User's Manual This manual explains specifications of the Q170MSCPU Motion controller, Q172DLX Servo external signal interface module, Q173DPX Manual pulse generator interface module, Servo amplifiers, SSCNET III cables, and the maintenance/inspection for the system, trouble shooting and others.	IB-0300212 (1XB962)
Q170MCPU Motion controller User's Manual This manual explains specifications of the Q170MCPU Motion controller, Q172DLX Servo external signal interface module, Q173DPX Manual pulse generator interface module, Servo amplifiers, SSCNETIII cables, and the maintenance/inspection for the system, trouble shooting and others.	IB-0300156 (1XB941)
Q173D(S)CPU/Q172D(S)CPU Motion controller Programming Manual (COMMON) This manual explains the Multiple CPU system configuration, performance specifications, common parameters, auxiliary/applied functions, error lists and others.	IB-0300134 (1XB928)

Manual Name	Manual Number (Model Code)
Q173D(S)CPU/Q172D(S)CPU Motion controller (SV13/SV22) Programming Manual (Motion SFC) This manual explains the functions, programming, debugging, error lists for Motion SFC and others.	IB-0300135 (1XB929)
Q173D(S)CPU/Q172D(S)CPU Motion controller (SV13/SV22) Programming Manual (REAL MODE) This manual explains the servo parameters, positioning instructions, device lists, error lists and others.	IB-0300136 (1XB930)
Q173D(S)CPU/Q172D(S)CPU Motion controller (SV22) Programming Manual (VIRTUAL MODE) This manual explains the dedicated instructions to use the synchronous control by virtual main shaft, mechanical system program create mechanical module, servo parameters, positioning instructions, device lists, error lists and others.	IB-0300137 (1XB931)
Q173DSCPU/Q172DSCPU Motion controller (SV22) Programming Manual (Advanced Synchronous Control) This manual explains the dedicated instructions to use the synchronous control by synchronous control parameters, device lists, error lists and others.	IB-0300198 (1XB953)
Q173D(S)CPU/Q172D(S)CPU Motion controller Programming Manual (Safety Observation) This manual explains the details, safety parameters, safety sequence program instructions, device lists and error lists and others for safety observation function by Motion controller.	IB-0300183 (1XB945)
Q173HCPU/Q172HCPU Motion controller User's Manual This manual explains specifications of the Motion CPU modules, Q172LX Servo external signal interface module, Q172EX Serial absolute synchronous encoder interface module, Q173PX Manual pulse generator interface module, Teaching units, Power supply modules, Servo amplifiers, SSCNETIII cables, synchronous encoder cables and others.	IB-0300110 (1XB910)
Q173HCPU/Q172HCPU Motion controller Programming Manual (COMMON) This manual explains the Multiple CPU system configuration, performance specifications, common parameters, auxiliary/applied functions and others.	IB-0300111 (1XB911)
Q173HCPU/Q172HCPU Motion controller (SV13/SV22) Programming Manual (Motion SFC) This manual explains the functions, programming, debugging, error codes and others of the Motion SFC.	IB-0300112 (1XB912)
Q173HCPU/Q172HCPU Motion controller (SV13/SV22) Programming Manual (REAL MODE) This manual explains the servo parameters, positioning instructions, device list, error list and others.	IB-0300113 (1XB913)
Q173HCPU/Q172HCPU Motion controller (SV22) Programming Manual (VIRTUAL MODE) This manual explains the dedicated instructions use to the synchronous control by virtual main shaft, mechanical system program create mechanical module. This manual explains the servo parameters, positioning instructions, device list, error list and others.	IB-0300114 (1XB914)

Manual Name	Manual Number (Model Code)
Q173HCPU/Q172HCPU Motion controller (SV43) Programming Manual This manual explains the dedicated instructions to execute the positioning control by Motion program of EIA language (G-code), the servo parameters, positioning instructions, device list, error list and others.	IB-0300115 (1XB915)
Q173CPU(N)/Q172CPU(N) Motion controller User's Manual This manual explains specifications of the Motion CPU modules, Q172LX Servo external signal interface module, Q172EX Serial absolute synchronous encoder interface module, Q173PX Manual pulse generator interface module, Teaching units, Power supply modules, Servo amplifiers, SSCNET cables, synchronous encoder cables and others.	IB-0300040 (1XB780)
Q173CPU(N)/Q172CPU(N) Motion controller (SV13/SV22) Programming Manual (Motion SFC) This manual explains the Multiple CPU system configuration, performance specifications, functions, programming, error codes and others of the Motion SFC.	IB-0300042 (1XB781)
Q173CPU(N)/Q172CPU(N) Motion controller (SV13/SV22) Programming Manual (REAL MODE) This manual explains the servo parameters, positioning instructions, device list, error list and others.	IB-0300043 (1XB782)
Q173CPU(N)/Q172CPU(N) Motion controller (SV22) Programming Manual (VIRTUAL MODE) This manual explains the dedicated instructions use to the synchronous control by virtual main shaft, mechanical system program create mechanical module. This manual explains the servo parameters, positioning instructions, device list, error list and others.	IB-0300044 (1XB783)
Q173CPU(N)/Q172CPU(N) Motion controller (SV43) Programming Manual This manual explains the dedicated instructions to execute the positioning control by Motion program of EIA language (G-code). This manual explains the Multiple CPU system configuration, performance specifications, functions, programming, debugging, servo parameters, positioning instructions device list and error list and others.	IB-0300070 (1XB784)

1. OVERVIEW

1.1 Overview

This manual describes those items related to the setup of the Motion controller programming software MT Works2.

In this manual, the following abbreviations are used.

Generic term/Abbreviation	Description
MELSOFT MT Works2	Package product of the Motion controller engineering environment
MT Developer2	
MT Developer2	Programming software included in MELSOFT MT Works2
MR Configurator2	Servo support software included in MELSOFT MT Works2
MT Developer	Integrated start-up support software package for the Q series Motion controller SW6RNC-GSVE
SW6RNC-GSVE	Integrated start-up support software package for the Q series Motion controller MT Developer
SW3RNC-GSVE	Integrated start-up support software package for the A series Motion controller
SW6RN-SNETP	Communication system software package included in SW6RNC-GSVE
SW3RN-SNETP	Communication system software package included in SW3RNC-GSVE
MR Configurator	Servo support software package MRZJW3-SETUP221E
Motion CPU or Motion controller	R32MTCPU/R16MTCPU/ Q173DSCPU/Q172DSCPU/Q170MSCPU/Q170MSCPU-S1 Q173DCPU/Q172DCPU/Q173DCPU-S1/Q172DCPU-S1/Q170MCPU Q173HCPU/Q172HCPU/Q173HCPU-T/Q172HCPU-T/ Q173CPU/Q172CPU/Q173CPUN/Q172CPUN/Q173CPUN-T/Q172CPUN-T Motion CPU module
R32MTCPU/R16MTCPU	R32MTCPU/R16MTCPU MELSEC iQ-R Series Motion CPU module
Q173D(S)CPU/Q172D(S)CPU/ Q170MSCPU/Q170MSCPU-S1/ Q170MCPU	Q173DSCPU/Q172DSCPU/Q170MSCPU/Q170MSCPU-S1 Q173DCPU/Q172DCPU/Q173DCPU-S1/Q172DCPU-S1/Q170MCPU Q Series Motion CPU module
Q173HCPU/Q172HCPU	Q173HCPU/Q172HCPU/Q173HCPU-T/Q172HCPU-T Q Series Motion CPU module
Q173CPU(N)/Q172CPU(N)	Q173CPU/Q172CPU/Q173CPUN/Q172CPUN/Q173CPUN-T/Q172CPUN-T Q Series Motion CPU module
Operating System software	General name for " SW10DNC-RMTFW, SW□DNC-SV□Q□, SW□RN-SV□Q□"
SV13	Operating system software for conveyor assembly use: SW8DNC-SV13Q□ /SW6RN-SV13Q□
SV22	Operating system software for automatic machinery use: SW8DNC-SV22Q□ /SW6RN-SV22Q□
SV43	Operating system software for the peripheral of machine tools: SW7DNC-SV43Q□ /SW5RN-SV43Q□
SV54	Operating system software for the dedicated robot: SW5RN-SV54Q□
SSCNET	High speed serial communication between the Motion CPU and servo amplifier
A10BD-PCF	A10BD-PCF SSC I/F board
A30CD-PCF	A30CD-PCF SSC I/F card

1.2 Features

MT Works2 is programming software for configuring and maintaining a system using the Motion controllers.
Offering the program design environment and maintenance environment, the software can be used for various applications in all the phases of configuring a Motion controller system (system design → program development → debugging → startup → operation and maintenance).
In addition, work efficiency is increased, by the expanded functions and improved operability, in all the system configuration phases.

2. OPERATING ENVIRONMENT

2.1 Operating Environment

Item		Contents
Personal computer main body	Personal computer	Windows® supported personal computer
	OS	Microsoft® Windows® XP Service Pack: 2, 3 Windows® XP Professional, Windows® XP Home Edition Microsoft® Windows Vista® (32-bit) Service Pack: Up to 2 Windows Vista® Enterprise, Windows Vista® Ultimate, Windows Vista® Business, Windows Vista® Home Premium, Windows Vista® Home Basic Microsoft® Windows® 7 (32-bit/64-bit) Service Pack: Up to 1 Windows® 7 Enterprise, Windows® 7 Ultimate, Windows® 7 Professional, Windows® 7 Home Premium, Windows® 7 Starter Microsoft® Windows® 8 (32-bit/64-bit) Windows® 8 Enterprise, Windows® 8 Pro, Windows® 8 Microsoft® Windows® 8.1 (32-bit/64-bit) Windows® 8.1 Enterprise, Windows® 8.1 Pro, Windows® 8.1
	CPU	Desktop PC: Intel® Celeron® Processor 2.8GHz or higher Laptop PC: Intel® Pentium® M Processor 1.7GHz or higher
	Required memory	1GB or more recommended (For 32-bit edition) 2GB or more recommended (For 64-bit edition)
	Video card	Video card supporting Microsoft® DirectX® 9.0c or higher
Available hard disk space		When installing: Available hard disk space 3GB or more When operating: Available virtual memory space 512MB or more
Disk drive		3.5 inch (1.44MB) floppy disk drive(Note-1) DVD-ROM supported disk drive
Monitor		Resolution 1024 x 768 pixels or higher
Communication interfaces		RS-232 port, USB port, Ethernet port SSC I/F card (A30CD-PCF)(Note-2), SSC I/F board (A10BD-PCF)(Note-2)

(Note-1): Required when installing the operating system software from a floppy disk.

(Note-2): The 64-bit edition of Windows® 7/Windows® 8 is not supported.
The 32-bit/64-bit edition of Windows® 8.1 is not supported.

POINT

MR Configurator2 is also installed simultaneously.
For the details of the MR Configurator2, refer to the "MR Configurator2 SW1DNC-MRC2 INSTALLATION GUIDE".

2. OPERATING ENVIRONMENT

CAUTION

(1) This product may not perform properly when the following functions are used under Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1.
- Activating the application with Windows® compatible mode.
- Simplified user switch-over
- Remote desktop
- Large fonts (Detail settings of screen property)
- DPI setting other than that of the normal size (Detail settings of screen property)

(2) In Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1, log in as a user having User authority or higher.
Otherwise, you should have the administrator level to link to SoftGOT.

(3) The following functions cannot be used under Windows® 7.
- Windows XP Mode, Touch

(4) The following functions cannot be used under Windows® 8/Windows® 8.1.
- Hyper-V, Modern UI Style, Touch

2.2 Use Conditions

(1) Supported Motion CPU/Motion controller OS list

Motion CPU module	Operating system software			
	SV13	SV22	SV43	SV54
R32MTCPU/R16MTCPU	○			
Q173DSCPU/ Q172DSCPU	○	○	×	
Q170MSCPU/ Q170MSCPU-S1	○	○	×	
Q173DCPU(-S1)/ Q172DCPU(-S1)	○	○	○	
Q170MCPU	○	○	○	
Q173HCPU(-T)/ Q172HCPU(-T)	○	○	○	○
Q173CPUN-T/ Q173CPU(N)/ Q172CPUN-T/ Q172CPU(N)	○	○	○	○

○ : Supported × : Unsupported

(Note-1): The A series Motion CPUs are not supported by MT Developer2.
(Note-2): There is no OS class in R32MTCPU/R16MTCPU.
For convenience, this text explains on class column of SV13/22.

(2) Coexistence with SW6RNC-GSVE and SW3RNC-GSVE
The Operation availability when MT Developer2 is used (coexisted) with other applications is shown in the table below. For the "Cannot be operated" start and use either application. Do not start and use both applications.

Application		MT Developer2		
	Operation	Edit	Communication (RS-232 and USB)	Communication (SSCNET)
SW6RNC-GSVE	Edit	○	○	○
	Communication (RS-232 and USB)	○	○(Note-2)	×(Note-1)
	Communication (SSCNET)	○	○(Note-2)	×(Note-1)
SW3RNC-GSVE	Edit	○	○	○
	Communication (RS-232)	○	×(Note-1)	×(Note-1)
	Communication (SSCNET)	○	×(Note-1)	×(Note-1)

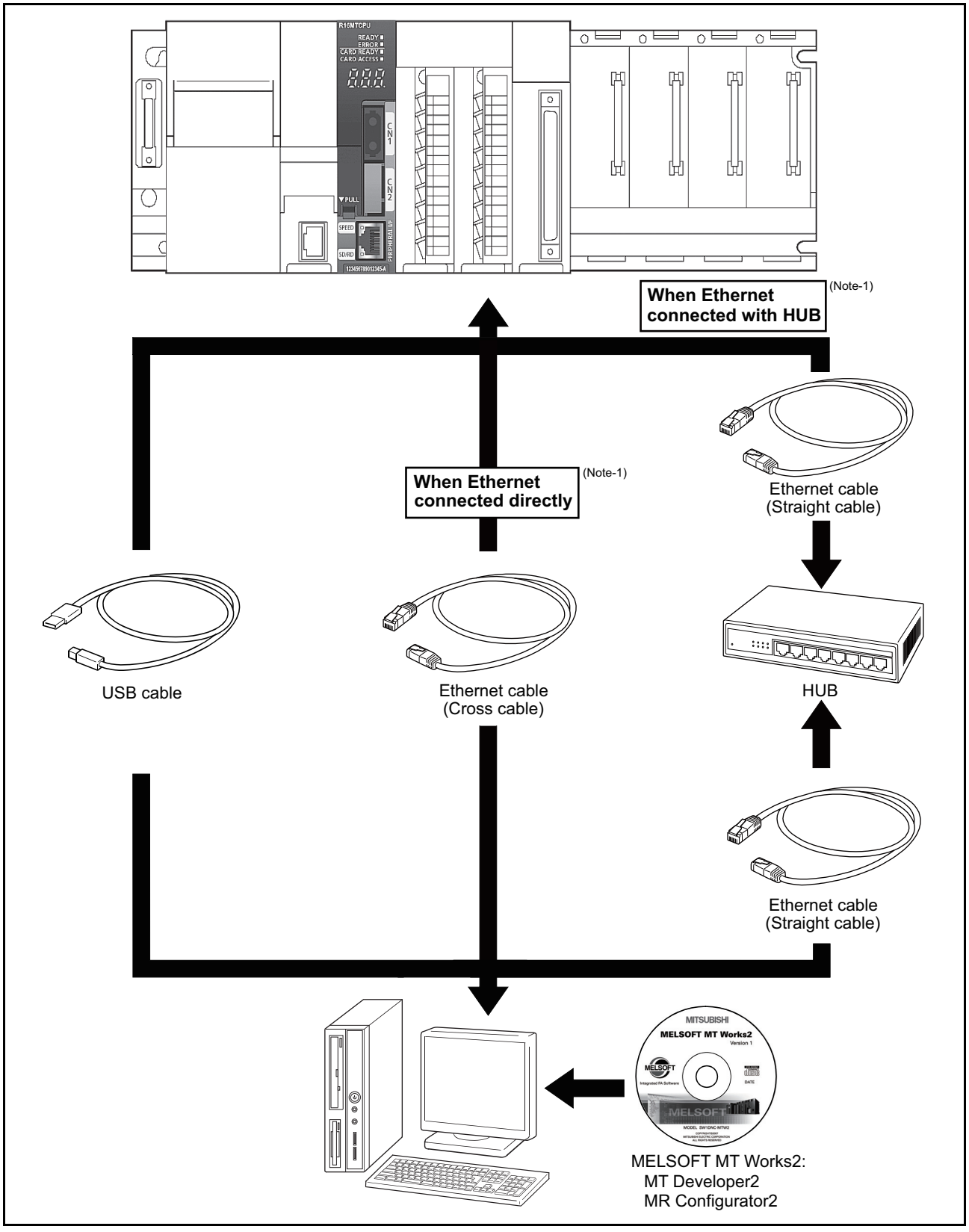
○ : Can be operated × :Cannot be operated

(Note-1): Both one-way communication and two-way simultaneous communication cannot be operated.
(Note-2): Simultaneous communication can be operated.

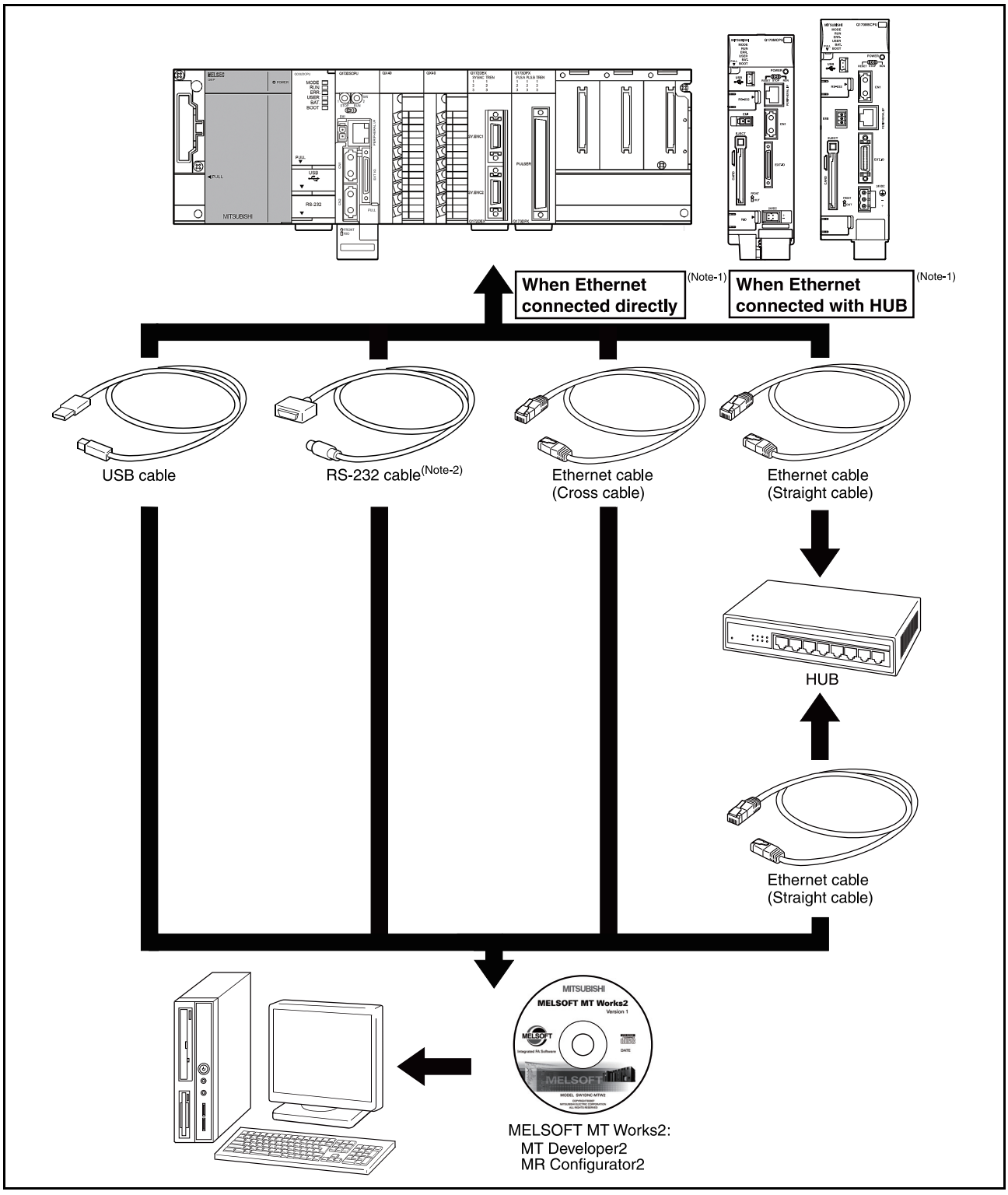
3. SYSTEM CONFIGURATION

3.1 System Configuration

3.1.1 When using R32MTCPU/R16MTCPU



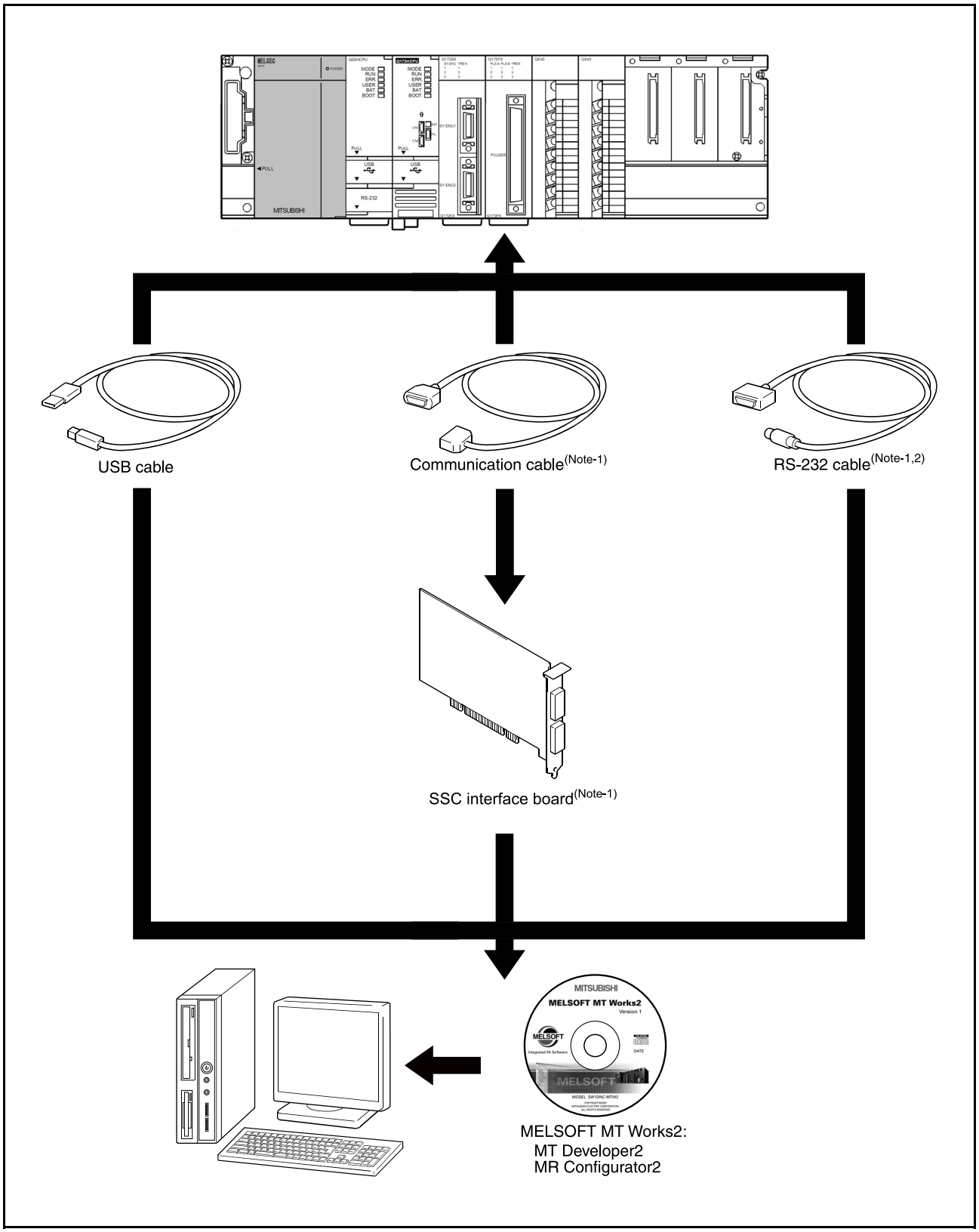
3.1.2 When using Q173D(S)CPU/Q172D(S)CPU/Q170MSCPU/Q170MSCPU-S1/Q170MCPU



(Note-1): Q173DCPU/Q172DCPU is not available.
(Note-2): For details, refer to "3.2 Component List".

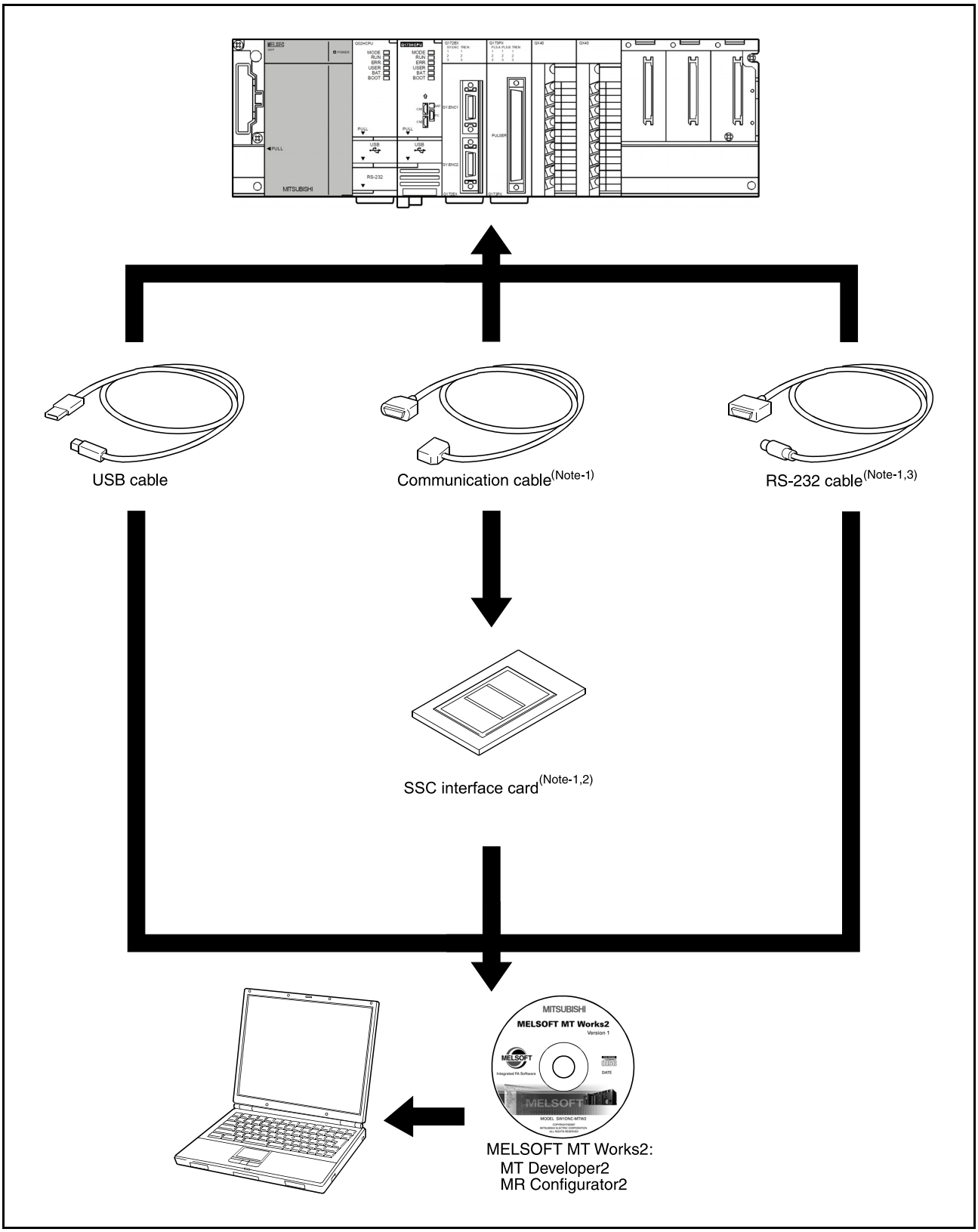
3.1.3 When using Q173HCPU/Q172HCPU/Q173CPU(N)/Q172CPU(N)

(1) Precautions for using a desktop personal computer



(Note-1): For details, refer to "3.2 Component List".
(Note-2): Q173HCPU/Q172HCPU is not available.

(2) Precautions for using a laptop computer



(Note-1): For details, refer to "3.2 Component List".
(Note-2): We do not guarantee the proper operation of A30CD-PCF on all types of laptop personal computers.
(Note-3): Q173HCPU/Q172HCPU is not available.

POINT

<When used in the USB/RS-232>

(1) If the USB cable is connected or disconnected or the multiple CPU system is reset (or turned off and on) frequently during communication of the Motion CPU, an unrecoverable communication error may occur. Disconnect MT Works2 from the line(Note-1) whenever possible when disconnecting or connecting the USB cable or resetting or turning on or off the multiple CPU system.
If a communication error is not removed, disconnect the USB cable completely and, after five seconds, connect it again. (Though an error may occur during the first communication session after this operation, the correct function is recovered at and after the second session.)
However, a communication error may not be removed even after the above operation with some personal computer models. In this case, reset the personal computer.

(2) A communication error may occur according to some combination of the model of the personal computers and the USB cable and so on.
If this happens, repeat operation while referring to the displayed message.

(3) If the baud rate of the serial port of the personal computer (interface on the personal computer side) is changed for high speed communication, communication may be unsuccessful or communication retries may occur to result in slow communication, according to certain PC performance.
If high speed communication is unsuccessful, decrease the baud rate.

(4) USB cable
- The USB cable can be used with a USB driver.
- If the USB cable is used, only one Motion CPU can be connected.

(Note-1): Disconnection from line (Offline state)
State where there is no communication with the Motion CPU (Program or parameter reading/writing, monitoring and testing are made in the online state.)

POINT

<When used in the Ethernet>

(1) We do not guarantee the operation in the following connections.
- Connection via the Internet (general public line)
- Connection via a firewall device
- Connection via the broadband rooter
- Connection via the wireless LAN

(2) If the resume function, suspension setting, power-saving function or stand-by mode is set in the personal computer used for communication with the CPU, a communication error may occur.
Do not use these functions at the personal computer used for communication with the CPU.

When used in the direct connection

(1) Communication can be made only by selecting the direct connection (default) on the Transfer Setup screen of MT Works2.
It is not necessary to set the IP address, IP address input format, or protocol.

When used in the connection with HUB

(1) It is necessary to set the parameters using MT Works2 for the connection with HUB.
- IP address: Set the IP address at the CPU side.
- Protocol: Select from TCP and UDP in accordance with the other device.

Resetting or turning on again the CPU after writing the parameters to the CPU makes the set parameters valid.
If parameters are written with no IP address set, they must be written in the direct connection first.

(2) Communication with the CPU with the IP address set can be made by setting the IP address/host name and protocol on the Transfer Setup screen of MT Works2 after performing the operations described in (1).
- IP address/host name: Set the IP address or host name.
(For the host name, use the name set with the hosts file of Windows.)
- Protocol: Select from TCP and UDP in accordance with the other device.

POINT

<When used in the SSC I/F board and SSC I/F card >

(1) The SSC I/F board and SSC I/F card cannot be used together.

(2) Insert the SSC I/F card into the personal computer after installing MT Works2 and setting up the SSCNET communication drivers. (MT Works2 can be reinstalled with the SSC I/F card loaded.)

(3) If the resume function, suspension setting, power-saving function or stand-by mode is set in the personal computer used for communication with the Motion CPU, a communication error may occur. Do not use these functions at the personal computer used for communication with the Motion CPU.

(4) If the USB cable is connected or disconnected or the multiple CPU system is reset (or turned off and on) frequently during communication of the Motion CPU, an unrecoverable communication error may occur. Disconnect MT Works2 from the line(Note-1) whenever possible when disconnecting or connecting the USB cable or resetting or turning on or off the multiple CPU system.
If a communication error is not removed, disconnect the USB cable completely and, after five seconds, connect it again. (Though an error may occur during the first communication session after this operation, the correct function is recovered at and after the second session.)
However, a communication error may not be removed even after the above operation with some personal computer models. In this case, reset the personal computer.

(5) A communication error may occur according to some combination of the model of the personal computers and the USB cable and so on. If this happens, repeat operation while referring to the displayed message.

(6) If the baud rate of the serial port of the personal computer (interface on the personal computer side) is changed for high speed communication, communication may be unsuccessful or communication retries may occur to result in slow communication, according to certain personal computer performance.
If high speed communication is unsuccessful, decrease the baud rate.

(7) USB cable
- The USB cable can be used with a USB driver.
- If the USB cable is used, only one Motion CPU can be connected.

(Note-1): Disconnection from line (Offline state)
State where there is no communication with the Motion CPU (Program or parameter reading/writing, monitoring and testing are made in the online state.)

3.2 Component List

The operations of the following devices have been checked by Mitsubishi.

Name	Type	Remarks
SSC interface board	A10BD-PCF	PCI bus loading type, 2 channels/board • The 64-bit edition of Windows® 7/Windows® 8 is not supported. • The 32-bit/64-bit edition of Windows® 8.1 is not supported. • PCI bus built-in type. • Up to 4 boards on one Windows® XP/Windows® Vista/Windows® 7/Windows® 8 operating PC (Can be connected to up to 8 motion controllers)
SSC interface card	A30CD-PCF	PCMCIA type II, 1 channel/card • The 64-bit edition of Windows® 7/Windows® 8 is not supported. • The 32-bit/64-bit edition of Windows® 8.1 is not supported. • Up to 1 card on one personal computer.
Communication cable (Note-1)	Q170BDCBL3M	For A10BD-PCF 3m (9.84ft.)
	Q170BDCBL5M	For A10BD-PCF 5m (16.40ft.)
	Q170BDCBL10M	For A10BD-PCF 10m (32.81ft.)
	Q170CDCBL3M	For A30CD-PCF 3m (9.84ft.)
	Q170CDCBL5M	For A30CD-PCF 5m (16.40ft.)
	Q170CDCBL10M	For A30CD-PCF 10m (32.81ft.)
RS-232 cable	QC30R2	Mitsubishi Electric Corporation

(Note-1):Max. overall communication cable extension distance 30m.

The following shows the specifications of Ethernet cable.

Part name	Connection type	Cable type	Ethernet standard	Model name
Ethernet cable (Note-1)	Connection with HUB	Straight cable	10BASE-T	Compliant with Ethernet standards, category 5 or higher. • Shielded twisted pair cable (STP cable)
			100BASE-TX	
	Direct connection	Crossover cable	10BASE-T	
			100BASE-TX	

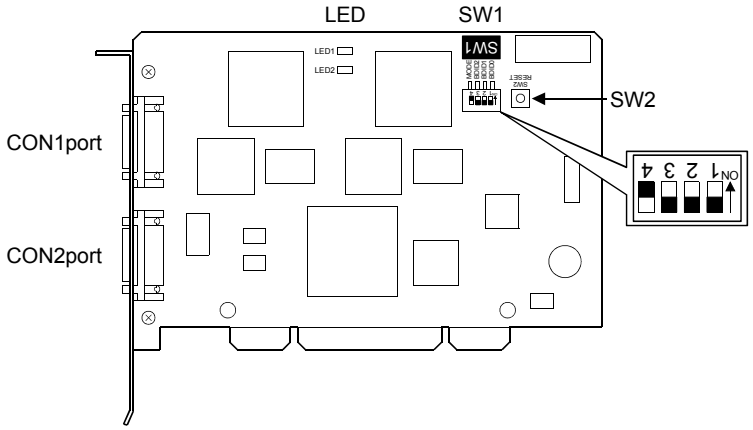
(Note-1): The following shows the selection criterion of cable.

- Category: 5 or higher.
- Diameter of lead: AWG26 or higher.
- Shield: Copper braid shield and drain wire.
  Copper braid shield and aluminum layered type shield.

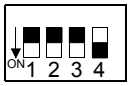
4. SETTING THE SSC INTERFACE BOARD

4.1 Setting the A10BD-PCF Interface Board

This section explains the switch setting of the A10BD-PCF interface board.
Note: The 64-bit edition of Windows® 7/Windows® 8 is not support.
The 32-bit/64-bit edition of Windows® 8.1 is not support.



(1) Board ID setting switch (SW1)
When there are two or more PCI type A10BD-PCF's, set the ID numbers to identify the respective A10BD-PCF's.

SW1		Definition	Default	Remarks
	1	Board ID bit 0 (BDID0)	OFF	Set the ID number. For details, refer to the following Table 4.1.
	2	Board ID bit 1 (BDID1)	OFF	
	3	Board ID bit 2 (BDID2)	OFF	
	4	Controller setting (MODE)	ON	Always set to ON.

1) Board ID bit choices 0 to 2 (SW1-1 to 3) and ID numbers

Table 4.1 ID Numbers

Switch Numbers			Board ID
1	2	3	
BDID0	BDID1	BDID2	
OFF	OFF	OFF	0
ON	OFF	OFF	1
OFF	ON	OFF	2
ON	ON	OFF	3

(2) Reset switch (SW2)
Turn on the reset switch (SW2) to reset the A10BD-PCF.
Do not press the reset switch during communication since doing so will shut off communication.
If normal communication cannot be made, press the reset switch to reset the A10BD-PCF and then start communication.

(3) LED display

Indicates the status of the A10BD-PCF.

- When the A10BD-PCF is normal: LED Flickers
- When the A10BD-PCF is abnormal: LED remains constant On or Off

LED1 For CON1 port

LED2 For CON2 port

(4) Allotment between Board IDs and SSCNET CH No.

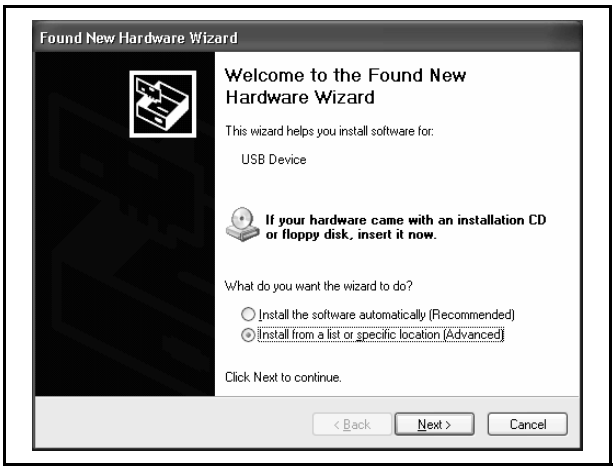
Board ID	CON1 port	CON2 port
0	CH.0	CH.1
1	CH.2	CH.3
2	CH.4	CH.5
3	CH.6	CH.7

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

5.1 USB Driver Installation Procedure

5.1.1 Precautions for using USB communication in Windows® XP

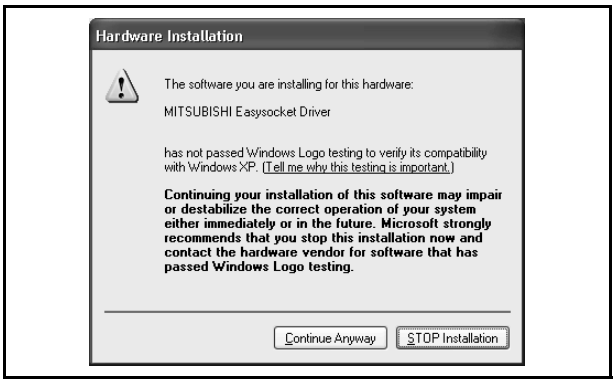
When Windows® XP is used, the USB driver must be installed to make USB communication with the Motion CPU for the first time.
The following indicates a USB driver installation procedure.


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
USB Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

1) The screen shown on the left appears when you connect the personal computer and Motion CPU with a USB cable.
Choose "Install from a list or specific location [Advanced]" and click Next >.

Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
C:\Program Files\MELSOFT\Easysocket\USBDriver
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

2) When the screen on the left appears, choose "Include this location in the search".
Check "Include this location in the search" and set "Easysocket\USBdrivers" of the folder where MT Developer2 was installed.
After setting, click Next >.
The screen shown on the left shows an example of setting C:\Program Files\MELSOFT\Easysocket\USBdrivers.
If volume MELSOFT products have been installed, browse the installation destination of the first product.
("\Program Files\MELSOFT\Easysocket\USBDrivers" or "\[Folder where this product is installed]\Easysocket\USBDrivers")


Hardware Installation
The software you are installing for this hardware:
MITSUBISHI Easysocket Driver
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

3) When the screen on the left appears, click Continue Anyway.

To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page

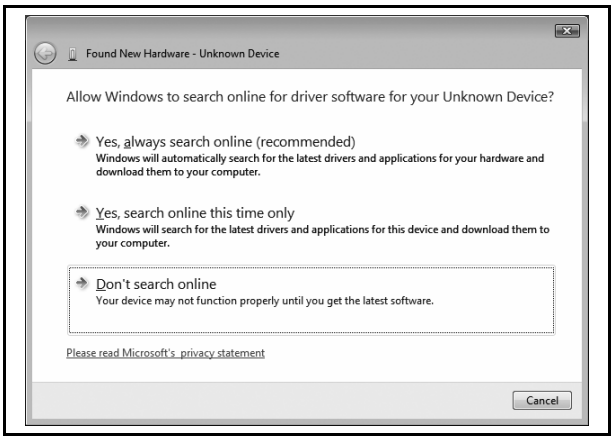
4) The screen on the left appears to indicate completion of installation.
Click Finish to terminate installation.

5.1.2 Precautions for using USB communication in Windows Vista®

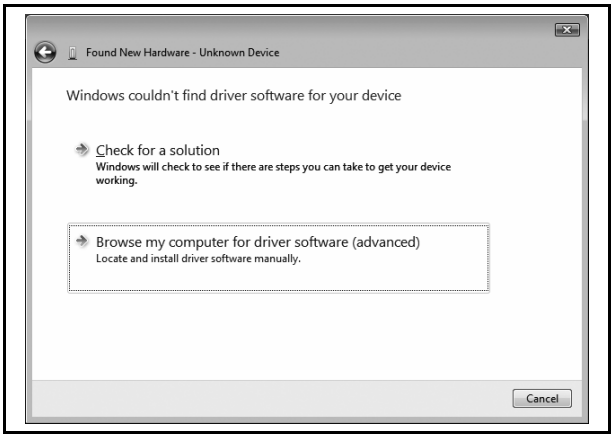
When Windows Vista® is used, the USB driver must be installed to make USB communication with the Motion CPU for the first time.
The following indicates a USB driver installation procedure.

Found New Hardware
Windows needs to install driver software for your Unknown Device
Locate and install driver software (recommended)
Windows will guide you through the process of installing driver software for your device.
Ask me again later
Windows will ask again the next time you plug in your device or log on.
Don't show this message again for this device
Your device will not function until you install driver software.
Cancel

1) The screen shown on the left appears when you connect the personal computer and Motion CPU with a USB cable.
Click [Locate and install driver software (recommended)].


Found New Hardware - Unknown Device
Allow Windows to search online for driver software for your Unknown Device?
Yes, always search online (recommended)
Windows will automatically search for the latest drivers and applications for your hardware and download them to your computer.
Yes, search online this time only
Windows will search for the latest drivers and applications for this device and download them to your computer.
Don't search online
Your device may not function properly until you get the latest software.
Please read Microsoft's privacy statement
Cancel

2) The screen on the left appears.
Click [Don't search online].

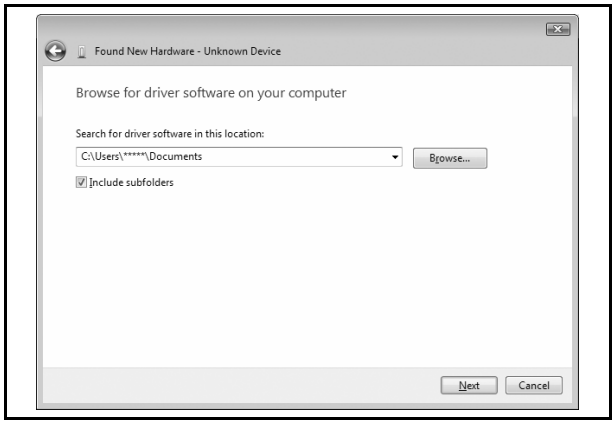

Found New Hardware - Unknown Device
Windows couldn't find driver software for your device
Check for a solution
Windows will check to see if there are steps you can take to get your device working.
Browse my computer for driver software (advanced)
Locate and install driver software manually.
Cancel

3) The screen on the left appears.
Click [Browse my computer for driver software (advanced)].

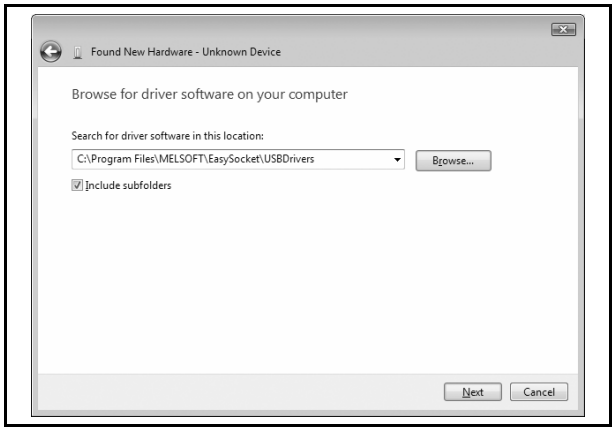
To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page



4) The screen on the left appears.
Click Browse….



5) When the screen on the left appears, set "Easysocket\USBdrivers" of the folder where MT Developer2 was installed. After setting, click Next.
The screen shown on the left shows an example of setting C:\Program Files\MELSOFT\Easysocket\USBdrivers.
If volume MELSOFT products have been installed, browse the installation destination of the first product. ("\Program Files\MELSOFT\Easysocket\USBDrivers " or "\[Folder where this product is installed]\Easysocket\USBDrivers")

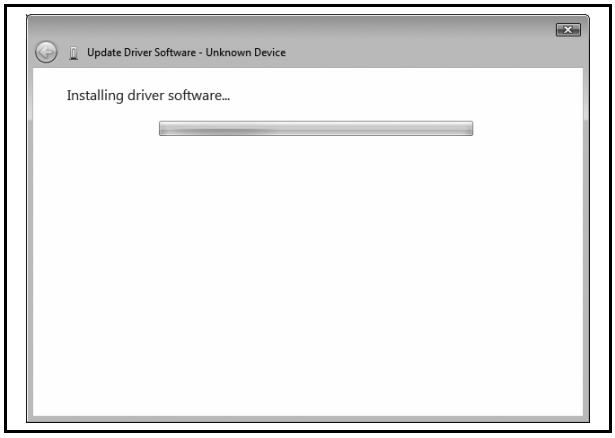
Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details

6) The screen on the left appears.
Click [Install this driver software anyway].

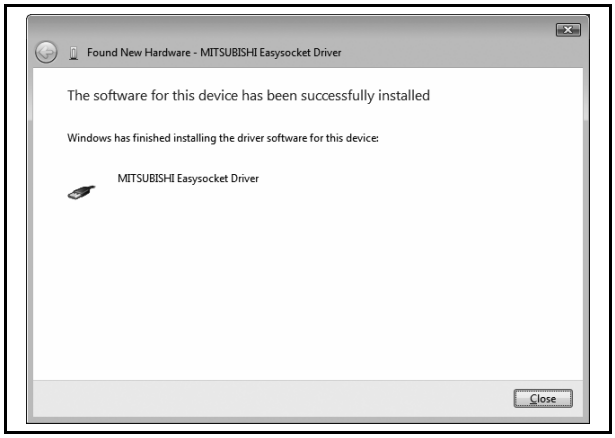
To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page



7) The screen on the left appears and the driver installation starts.

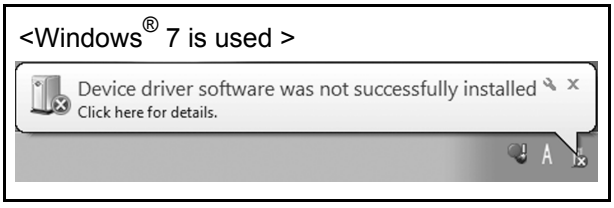

Found New Hardware - MITSUBISHI Easysocket Driver
The software for this device has been successfully installed
Windows has finished installing the driver software for this device:
MITSUBISHI Easysocket Driver
Close

8) The screen on the left appears to indicate completion of installation.
Click Close to terminate installation.

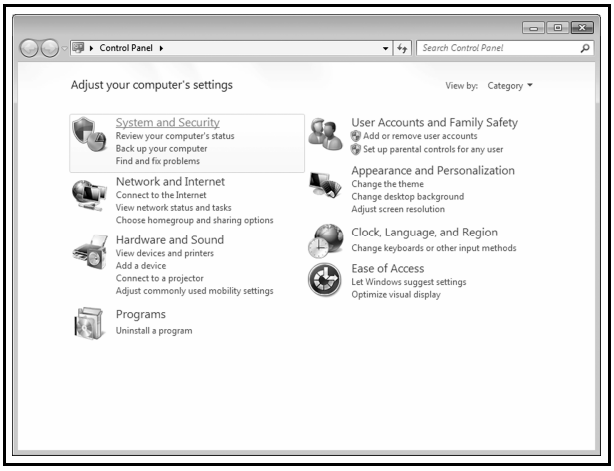
5.1.3 Precautions for using USB communication in Windows® 7/Windows® 8/Windows® 8.1

When Windows® 7/Windows® 8/Windows® 8.1 is used, the USB driver must be installed to make USB communication with the Motion CPU for the first time.

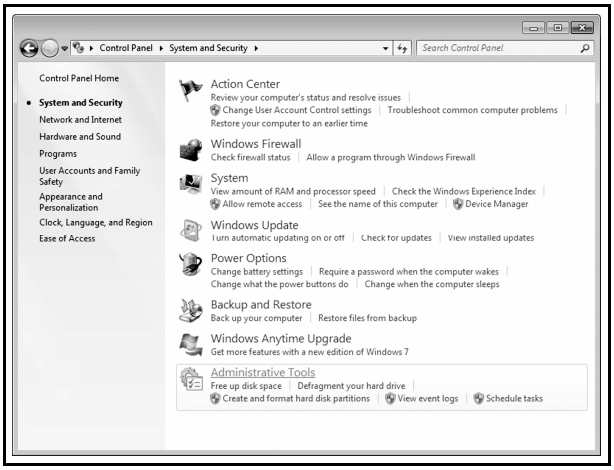
The following indicates a USB driver installation procedure.



1) Connect the personal computer and Motion CPU with a USB cable.
<Windows® 7 is used >
The screen shown on the left appears.
<Windows® 8/Windows® 8.1 is used >
Nothing appears.



2) Select "System and Security" from the Control Panel.
To display the Control Panel, select [Start] - [Control Panel].

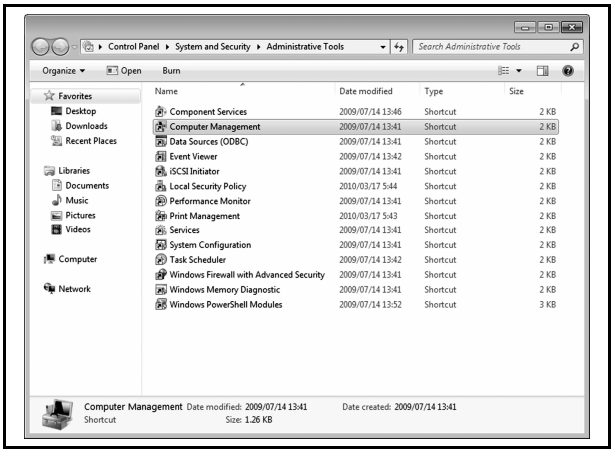


3) The screen on the left appears.
Select "Administrative Tools".

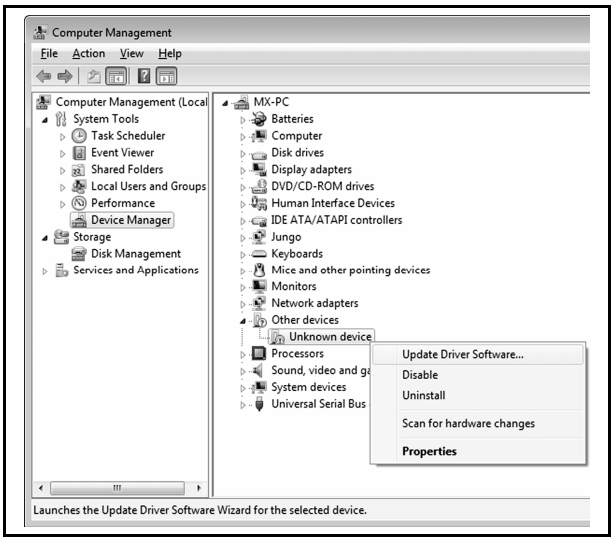
To next page

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

From preceding page


Control Panel ▸ System and Security ▸ Administrative Tools
Search Administrative Tools
Organize
Open
Burn
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Computer
Network
Name
Date modified
Type
Size
Component Services 2009/07/14 13:46 Shortcut 2 KB
Computer Management 2009/07/14 13:41 Shortcut 2 KB
Data Sources (ODBC) 2009/07/14 13:41 Shortcut 2 KB
Event Viewer 2009/07/14 13:42 Shortcut 2 KB
iSCSI Initiator 2009/07/14 13:41 Shortcut 2 KB
Local Security Policy 2010/03/17 5:44 Shortcut 2 KB
Performance Monitor 2009/07/14 13:41 Shortcut 2 KB
Print Management 2010/03/17 5:43 Shortcut 2 KB
Services 2009/07/14 13:41 Shortcut 2 KB
System Configuration 2009/07/14 13:41 Shortcut 2 KB
Task Scheduler 2009/07/14 13:42 Shortcut 2 KB
Windows Firewall with Advanced Security 2009/07/14 13:41 Shortcut 2 KB
Windows Memory Diagnostic 2009/07/14 13:41 Shortcut 2 KB
Windows PowerShell Modules 2009/07/14 13:52 Shortcut 3 KB
Computer Management Date modified: 2009/07/14 13:41 Date created: 2009/07/14 13:41
Shortcut Size: 1.26 KB

4) The screen on the left appears.
Select "Computer Management" and double-click it.



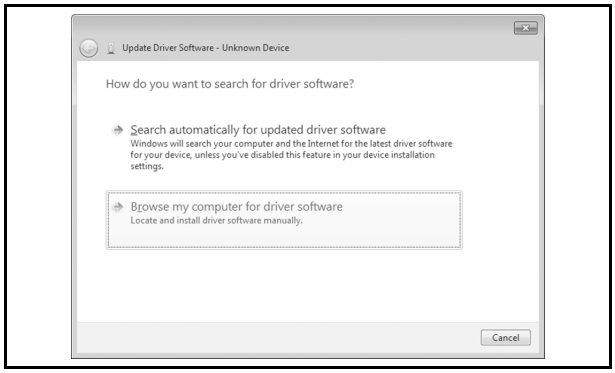
5) The screen on the left appears when selecting Device Manager in System Tools and right-clicking "Unknown device".
Select "Update Driver Software…".

Remarks

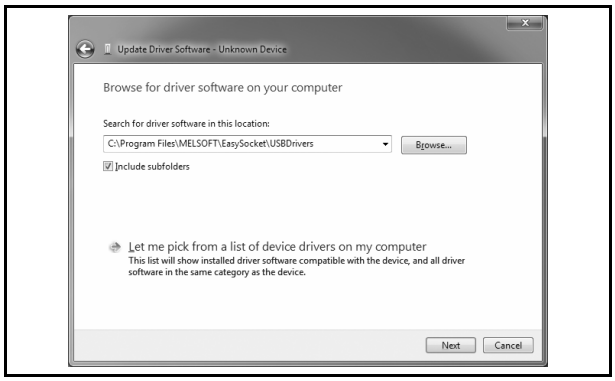
If multiple "Unknown devices" exist therefore cannot be specified, right-click "Unknown device" and select "Properties".
The "Unknown device", whose "Hardware ID" is "USB\VID_06D3&PID_1800" on the "Details" tab of the properties screen, is the update target.

To next page

From preceding page


Update Driver Software - Unknown Device
How do you want to search for driver software?
Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.
Browse my computer for driver software
Locate and install driver software manually.
Cancel

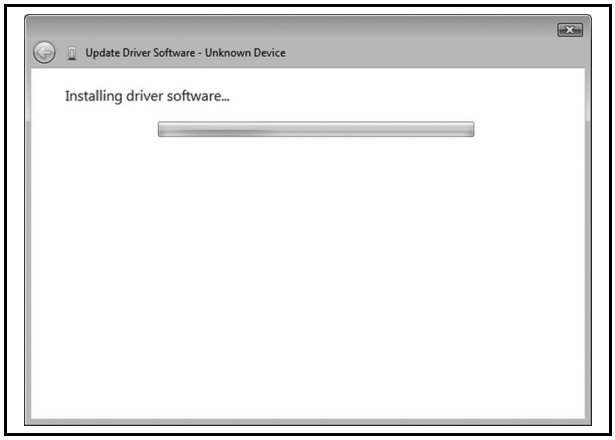
6) The screen on the left appears.
Click [Browse my computer for driver software].


Update Driver Software - Unknown Device
Browse for driver software on your computer
Search for driver software in this location:
C:\Program Files\MELSOFT\EasySocket\USBDrivers
Browse...
Include subfolders
Let me pick from a list of device drivers on my computer
This list will show installed driver software compatible with the device, and all driver software in the same category as the device.
Next
Cancel

7) The screen on the left appears.
Set "Easysocket\USBDrivers" of the folder where MT Developer2 was installed and then click Next.
The left screen is an example when C:\Program Files\MELSOFT\Easysocket\USBDrivers is specified.
If multiple MELSOFT products have been installed, specify the installation location of the first installed product.
For 64-bit edition: C:\Program Files (x86)\MELSOFT\Easysocket\USBDrivers

Windows Security
Would you like to install this device software?
Name: Easysocket USB Drivers
Publisher: MITSUBISHI ELECTRIC CORPORATION
Always trust software from "MITSUBISHI ELECTRIC CORPORATION".
Install
Don't Install
You should only install driver software from publishers you trust. How can I decide which device software is safe to install?

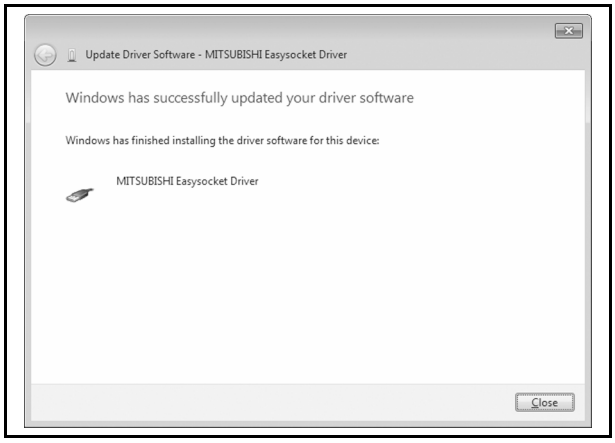
8) The screen on the left appears.
Click Install.



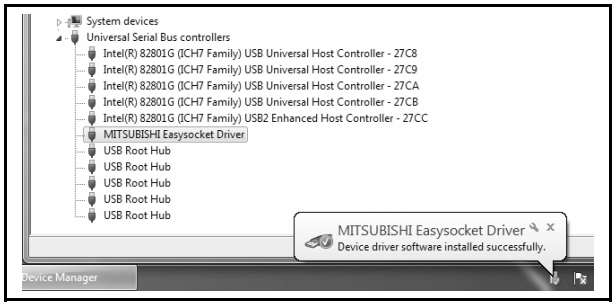
9) The screen on the left appears and the driver installation starts.

To next page

From preceding page


Update Driver Software - MITSUBISHI Easysocket Driver
Windows has successfully updated your driver software
Windows has finished installing the driver software for this device:
MITSUBISHI Easysocket Driver
Close

10) The screen on the left appears.
Click Close.


System devices
Universal Serial Bus controllers
Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8
Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C9
Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CA
Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CB
Intel(R) 82801G (ICH7 Family) USB2 Enhanced Host Controller - 27CC
MITSUBISHI Easysocket Driver
USB Root Hub
USB Root Hub
USB Root Hub
USB Root Hub
USB Root Hub
MITSUBISHI Easysocket Driver
Device driver software installed successfully.
Device Manager

11) "MITSUBISHI Easysocket Driver" is registered under "Universal Serial Bus controllers".
This completes driver installation.

5.2 Updating the USB Driver

In Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, if updating MELSOFT to be compatible after installing an incompatible MELSOFT, updating the USB driver is required.

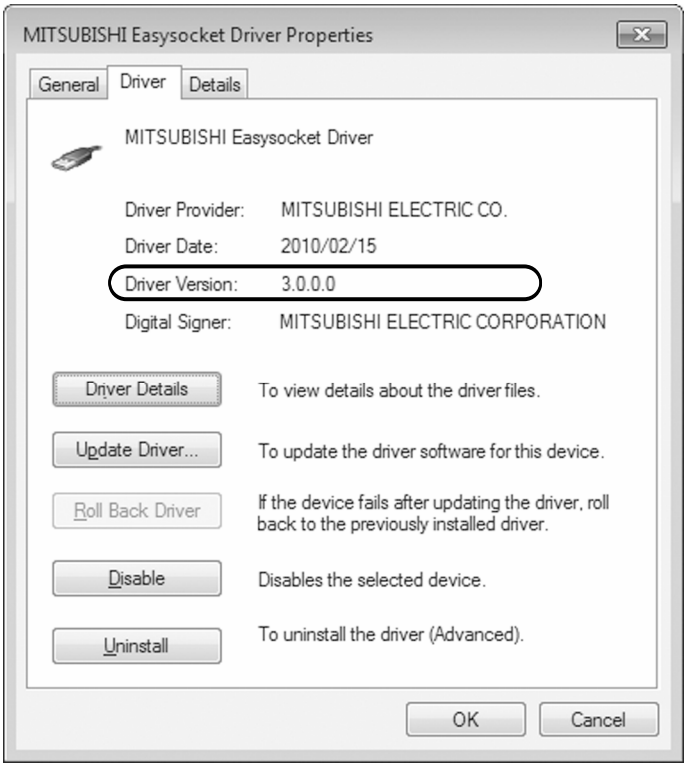
(1) Procedure for updating the USB driver for programmable controller connection

(a) Checking method

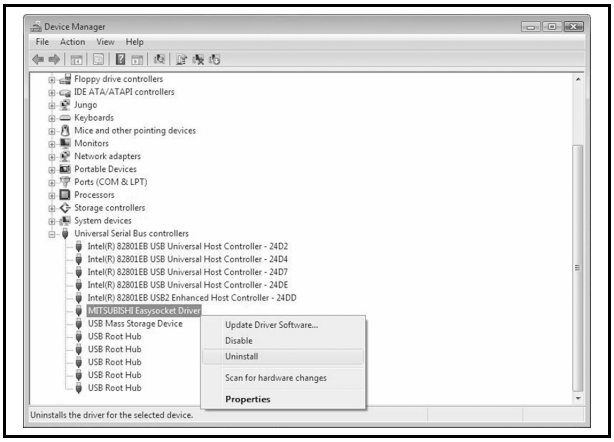
Start the Device Manager while the personal computer is connected to the motion CPU with USB, right-click "MITSUBISHI Easysocket Driver", and select "Properties".

Update is necessary if the version shown in the "Driver" tab of the properties screen is the following.

- Windows Vista® is used : "2.0.0.0" or earlier
- Windows® 7 is used : "3.0.0.0" or earlier
- Windows® 8/Windows® 8.1 is used : "4.0.0.0" or earlier



(b) Procedure for update



1) The screen on the left appears when the personal computer and the motion CPU are connected with a USB cable.
2) Start the Windows Device Manager, right-click "MITSUBISHI Easysocket Driver" as shown on the left, and select "Uninstall".

Confirm Device Uninstall
MITSUBISHI Easysocket Driver
Warning: You are about to uninstall this device from your system.
Delete the driver software for this device.
OK
Cancel

3) The warning dialog box as shown on the left appears. Check the "Delete the driver software for this device" check box, and click OK.

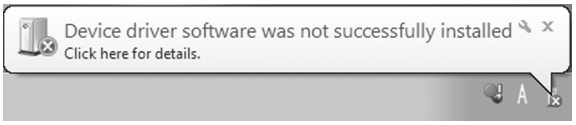
<Windows Vista® is used>

Found New Hardware
Windows needs to install driver software for your Unknown Device
Locate and install driver software (recommended)
Windows will guide you through the process of installing driver software for your device.
Ask me again later
Windows will ask again the next time you plug in your device or log on.
Don't show this message again for this device
Your device will not function until you install driver software.
Cancel

4) Disconnect the USB cable and reconnect it to the same USB port after 5 seconds.

<Windows Vista® is used>
The screen on the left appears for a while.
Click [Ask me again later].

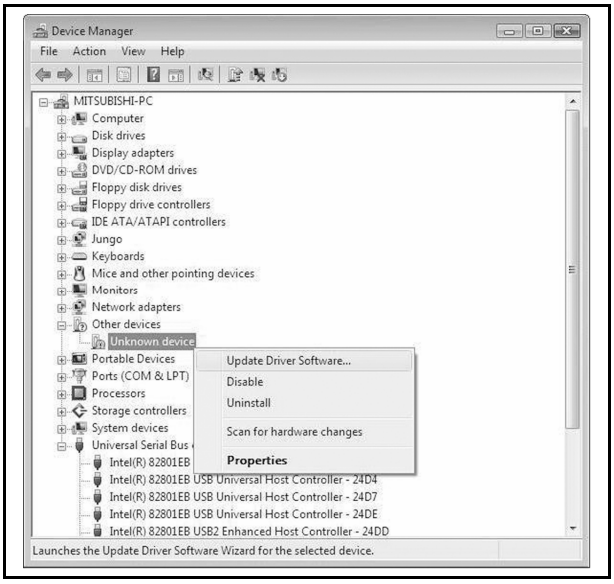
<Windows® 7 is used >



<Windows® 7 is used>
The screen on the left appears for a while.

To next page

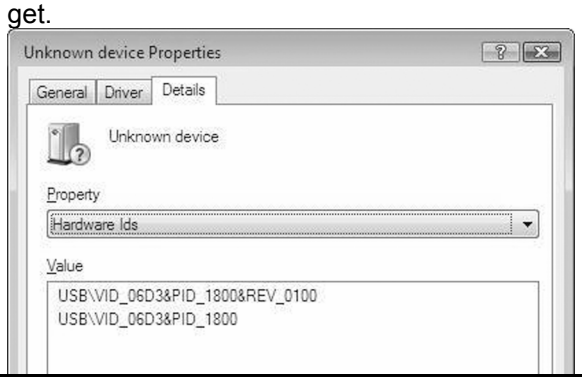
From preceding page

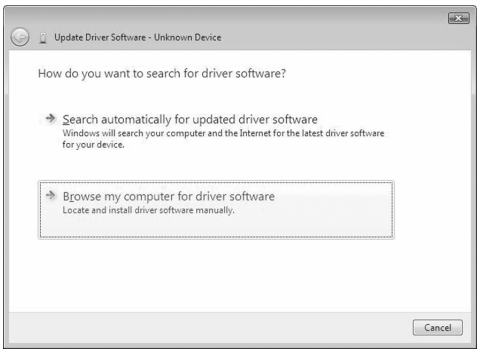


5) The screen on the left appears when selecting Device Manager in System Tools and right-clicking "Unknown device".
Select "Update Driver Software…".

Remarks

If multiple "Unknown devices" exist therefore cannot be specified, right-click "Unknown device" and select "Properties".
The "Unknown device", whose "Hardware ID" is "USB\VID_06D3&PID_1800" on the "Details" tab of the properties screen, is the update target.

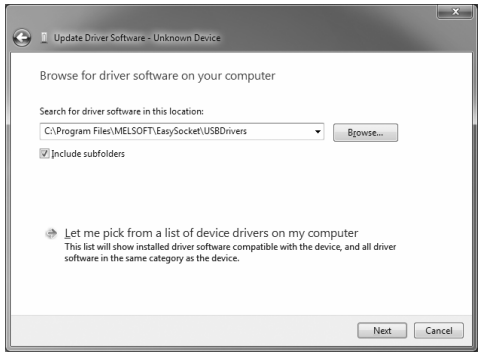



Update Driver Software - Unknown Device
How do you want to search for driver software?
Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device.
Browse my computer for driver software
Locate and install driver software manually.
Cancel

6) The screen on the left appears.
Select "Browse my computer for driver software".

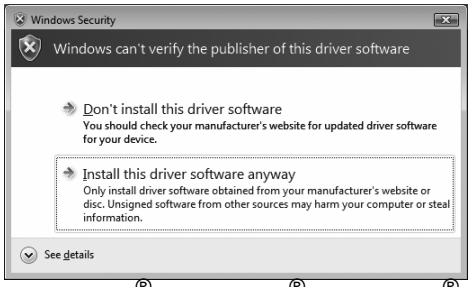
To next page

From preceding page


Update Driver Software - Unknown Device
Browse for driver software on your computer
Search for driver software in this location:
C:\Program Files\MELSOFT\EasySocket\USBDrivers
Browse...
Include subfolders
Let me pick from a list of device drivers on my computer
This list will show installed driver software compatible with the device, and all driver software in the same category as the device.
Next
Cancel

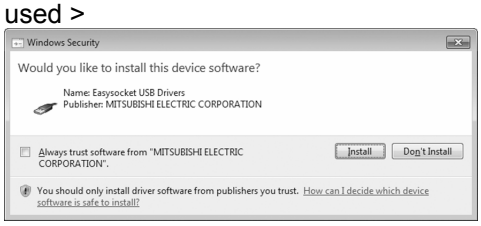
7) The screen on the left appears.
Set "Easysocket\USBDrivers" of the folder where MT Developer2 was installed and then click Next.
The left screen is an example when C:\Program Files\MELSOFT\Easysocket\USBDrivers is set.
If multiple MELSOFT products have been installed, refer to the installation location of the first installed product.

<Windows Vista® is used>

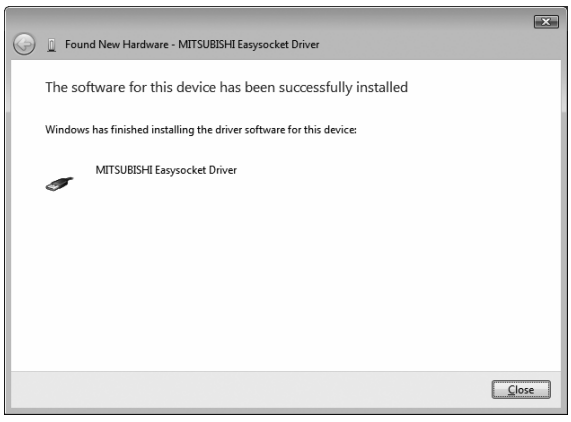

Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details

8) The screen on the left appears.
<Windows Vista® is used>
Click [Install this driver software anyway].

< Windows® 7/Windows® 8/Windows® 8.1 is used >


Windows Security
Would you like to install this device software?
Name: Easysocket USB Drivers
Publisher: MITSUBISHI ELECTRIC CORPORATION
Always trust software from "MITSUBISHI ELECTRIC CORPORATION".
Install
Don't Install
You should only install driver software from publishers you trust. How can I decide which device software is safe to install?

< Windows® 7/Windows® 8/Windows® 8.1 is used>
Click Install.


Found New Hardware - MITSUBISHI Easysocket Driver
The software for this device has been successfully installed
Windows has finished installing the driver software for this device:
MITSUBISHI Easysocket Driver
Close

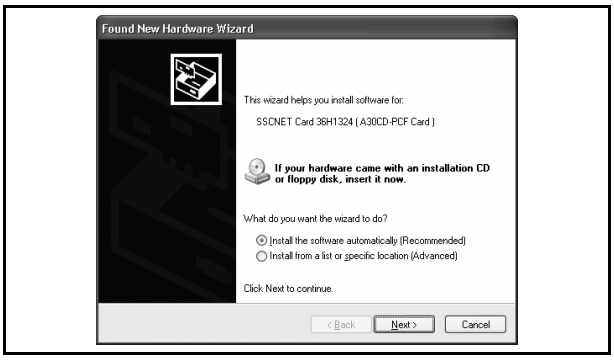
9) The screen on the left appears.
Click Close.
The update is complete.

5. COMMUNICATION DRIVER INSTALLATION PROCEDURE

5.3 SSCNET Driver Installation Procedure

5.3.1 Precautions for using SSCNET communication in Windows® XP

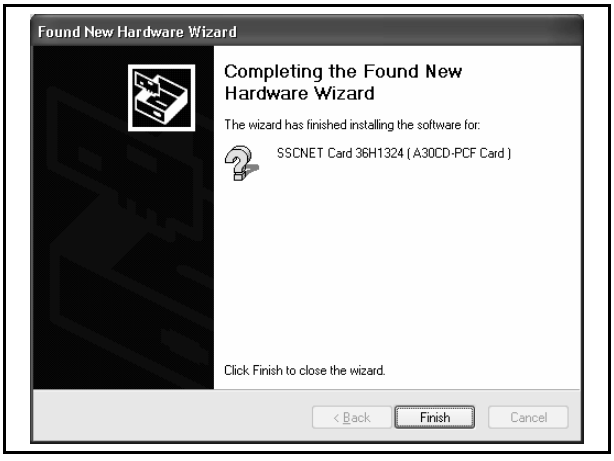
When the A30CD-PCF card or A10BD-PCF board is to be used for the first time in the Windows® XP, the SSCNET communication driver must be installed.
The following indicates the operation procedure to install the A30CD-PCF driver.
(For the A10BD-PCF, also perform similar operation to install the driver.)


Found New Hardware Wizard
This wizard helps you install software for:
SSCNET Card 36H1324 (A30CD-PCF Card)
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

1) Insert the A30CD-PCF card into the personal computer.
The screen on the left will soon appear.
Choose "Install the software automatically [Recommended]" and click Next >.

Hardware Installation
The software you are installing for this hardware:
SSCNET Card 36H1324 (A30CD-PCF Card)
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

2) The screen on the left appears.
Click Continue Anyway.


Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
SSCNET Card 36H1324 (A30CD-PCF Card)
Click Finish to close the wizard.
< Back
Finish
Cancel

3) The screen on the left appears.
Click Finish.

This completes driver installation.

5.3.2 Precautions for using SSCNET communication in Windows Vista®

When the A30CD-PCF card or A10BD-PCF board is to be used for the first time in the Windows Vista®, the SSCNET communication driver must be installed.
The following indicates the operation procedure to install the A10BD-PCF driver.
(For the A30CD-PCF, also perform similar operation to install the driver.)

Found New Hardware
Windows needs to install driver software for your Network Controller
Locate and install driver software (recommended)
Windows will guide you through the process of installing driver software for your device.
Ask me again later
Windows will ask again the next time you plug in your device or log on.
Don't show this message again for this device
Your device will not function until you install driver software.
Cancel

1) Insert the A10BD-PCF board into the personal computer.
The screen on the left appears.
Click "Locate and install driver software (recommended)".

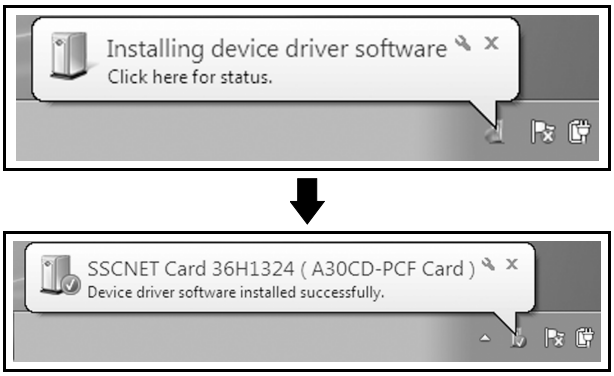
Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details

2) The screen on the left appears.
Click "Install this driver software anyway".

3) The screen on the left appears.
The "SSCNET PCI Board (A10BD-PCF)" name window appears on the indicator.
This completes driver installation.

5.3.3 Precautions for using SSCNET communication in Windows® 7

When the A30CD-PCF card or A10BD-PCF board is to be used for the first time in the Windows® 7, the SSCNET communication driver must be installed.
The following indicates the operation procedure to install the A30BD-PCF driver.
(For the A10CD-PCF, also perform similar operation to install the driver.)


Installing device driver software
Click here for status.
SSCNET Card 36H1324 (A30CD-PCF Card)
Device driver software installed successfully.

1) Insert the A30BD-PCF board into the personal computer.
The screen on the left appears.

2) The screen on the left appears.
This completes driver installation.

(Note-1): A30CD-PCF and A10BD-PCF does not support the 64-bit edition.

5.3.4 Precautions for using SSCNET communication in Windows® 8/ Windows® 8.1

When the A30CD-PCF card or A10BD-PCF board is to be used for the first time in the Windows® 8/ Windows® 8.1, the SSCNET communication driver must be installed.
The following indicates the operation procedure to install the A30BD-PCF driver.
(For the A10CD-PCF, also perform similar operation to install the driver.)

1) Insert the A30BD-PCF board into the personal computer.
The screen on the left appears.
When the icon disappears, the installation is complete.

(Note-1): A30CD-PCF and A10BD-PCF does not support the 64-bit edition.

6. PRECAUTION

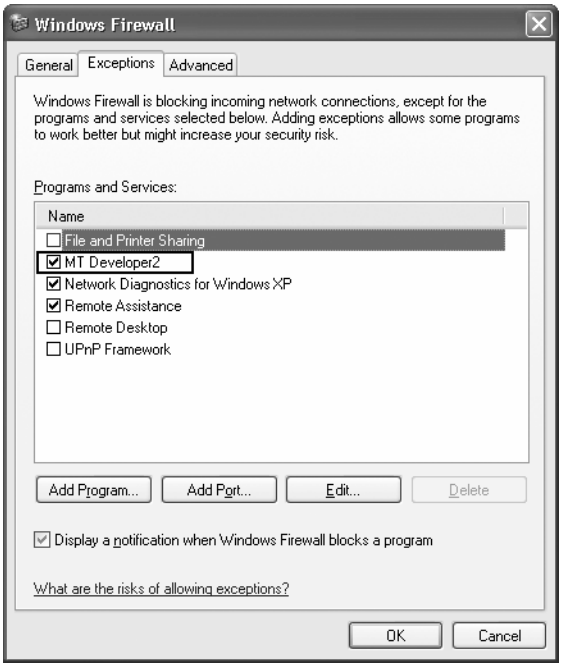
6.1 Uninstallation of SW6RN-SNETP or SW3RN-SNETP

Do not uninstall "SSCNET Communication Driver" when uninstalling the SW6RN-SNETP (Ver.00B or later) or SW3RN-SNETP (Ver.00G or later) in a personal computer where multiple MT Developer2 and SW6RNC-GSVE (MT Developer) or SW3RNC-GSVE are installed.
If the SSCNET communication driver is uninstalled, reinstall MT Developer2.

6.2 Finding Ethernet Built-in Type CPU on the Network

Windows Security Alert
To help protect your computer, Windows Firewall has blocked some features of this program.
Do you want to keep blocking this program?
Name: MT Developer2
Publisher: MITSUBISHI ELECTRIC CORPORATION
Keep Blocking
Unblock
Ask Me Later
Windows Firewall has blocked this program from accepting connections from the Internet or a network. If you recognize the program or trust the publisher, you can unblock it. When should I unblock a program?

When "Find Ethernet Built-in Type CPU on the Network" is executed at the CPU side I/F CPU module detail setting in the transfer setup, the "Windows Security Alert" dialog box may appear.
If this dialog box appears, select "Unblock".



When selecting "Block", operate as follows.
Mark the checkbox of "MT Developer2" in the "Programs and Services" list on the "exceptions" tag of Windows Firewall.

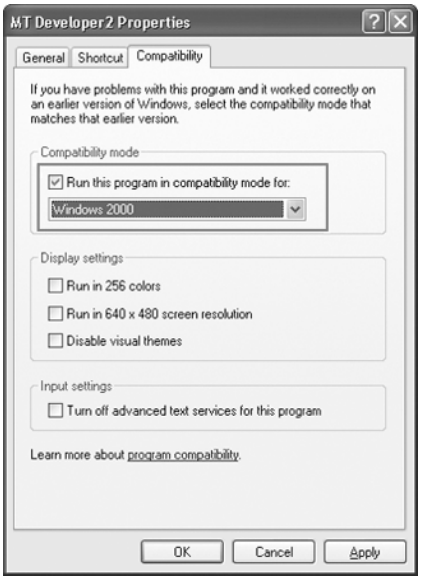
The image of the dialog box differs depending on Windows you use.
For details of the Windows Firewall settings, refer to Windows Help.

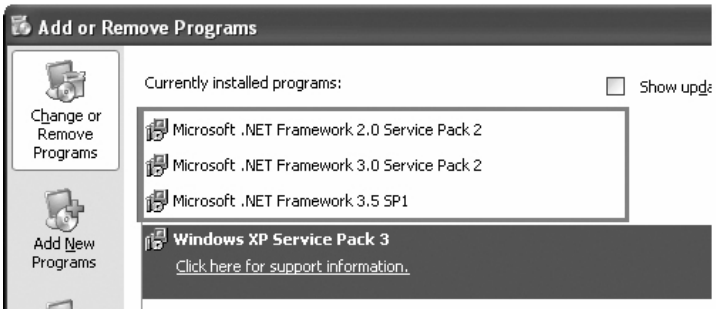
7. TROUBLESHOOTING

7.1 During USB Communication, Communication Error Occurred and Communication Is Not Recovered from Error

No.	Phenomenon	Cause and remedy
1	A communication error occurred during USB communication with the Motion CPU, and communication is not recovered from the error.	Any of operations 1) to 3) was performed during USB communication with the Motion CPU. 1) The USB cable was disconnected and connected during communication with the Motion CPU or connected after communication started. 2) The Motion CPU was reset. 3) The Motion CPU was cycled on/off. Do not perform any of operations 1) to 3) during USB communication. Doing so may cause a communication error, from which communication cannot be recovered. If any of operations of 1) to 3) is to be performed, it is recommended to put MT Works2 in an offline status(Note-1). If communication is not recovered from the error, disconnect the USB cable once, and after 5 or more seconds have elapsed, reconnect it. (The communication error may occur at the first time after the above operation is performed, but communication will return to normal at the second time and later.) Depending on the personal computer model, however, communication may not be recovered from the error if the above operation is performed. In that case, reset the personal computer. (Note-1): Offline status: Status in which communication is not made with the Motion CPU (In an online status, program/parameter read/write, monitoring, test or like is in execution.)

7.2 Project Cannot Be Saved or Read

No.	Phenomenon	Cause and remedy
1	A project cannot be saved or read. (Example) The following message may appear. To next page	<Cause 1)> The item "Execute this program in compatibility mode" is selected in the application properties. <Remedy 1)> Remove the check mark from "Execute this program in compatibility mode". 

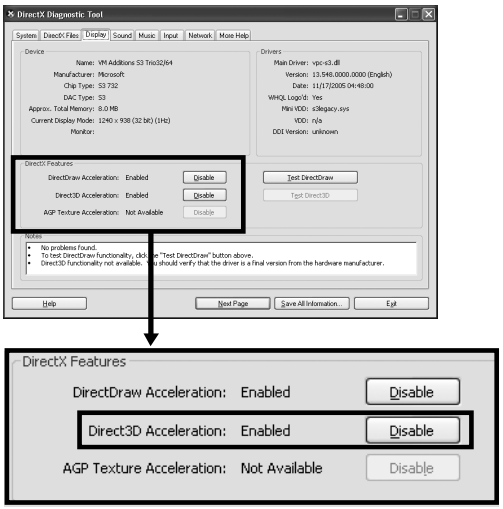
No.	Phenomenon	Cause and remedy
	From preceding page ⬇	<Cause 2)> A part of the Microsoft .NET Framework may be corrupted. <Remedy 2)> Uninstall the Microsoft .NET Framework from the personal computer, download the latest Microsoft .NET Framework from the web site of Microsoft and install it. Uninstall all the programs displayed with the name "Microsoft .NET Framework". When multiple programs are required to uninstall, uninstall them in descending order. (Example) The following shows the order of uninstalling of the figure below.  1) Microsoft .NET Framework 3.5 SP1 2) Microsoft .NET Framework 3.0 Service Pack 2 3) Microsoft .NET Framework 2.0 Service Pack 2

(Note-1): For Windows Vista® and Windows® 7, .Net Framework may not be displayed in "Uninstall or change a program" since it is installed by default.
(Windows Vista®: .Net Framework 3.0, Windows® 7: .Net Framework 3.51)
(Note-2): The following shows the latest version in November, 2009.
Microsoft .NET Framework 3.5 SP1

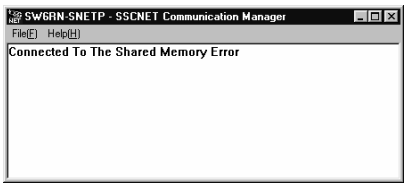
7.3 Sampling Omission May Occur on the Digital Oscilloscope

No.	Phenomenon	Cause and remedy
1	On the digital oscilloscope, a sampling omission may occur during sampling of data by SSCNET communication (PC real-time read method).	If other operation is performed during sampling, a sampling failure may occur.

7.4 Digital Oscilloscope Cannot Be Started

No.	Phenomenon	Cause and remedy
1	When the digital oscilloscope is started, the following message appears and the digital oscilloscope cannot be started. 	Check whether DirectX® can be operated by the DirectX Diagnostic Tool. Choose the [Display] tab in the DirectX® Diagnostic Tool. Check whether "DirectDraw Acceleration" of the "DirectX Features" is "Enabled". 

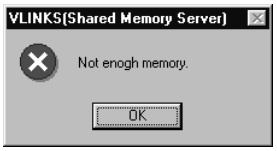
7.5 The SSCNET Communication Manager of SW6RN-SNETP Displays "Shared Memory Connection Error"

No.	Phenomenon	Cause and remedy
1	The SSCNET communication manager of SW6RN-SNETP displays "Connected To The Shared Memory Error" and SW6RN-SNETP is not started properly.  If SSCNET communication is started in this status, communication error "51" occurs. 	With MT Developer2 and SW6RN-SNETP started simultaneously, operation to start SW6RN-SNETP or to execute communication may cause a phenomenon shown on the left. To start SSCNET communication by SW6RN-SNETP, exit from MT Developer2 and SW6RN-SNETP once and restart only SW6RN-SNETP. To execute SSCNET communication, make communication with only either one of MT Developer2 or SW6RN-SNETP started.

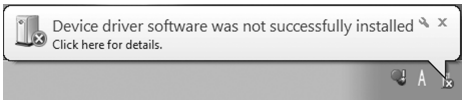
7.6 During Communication, "Can not allocate Share memory" Error Occurs

No.	Phenomenon	Cause and remedy
1	During communication, "Can not allocate Share memory" error occurs. 	The following operations may cause the phenomenon given on the left. • When the communication is forcibly shut down, during communication, by the CPU power turning off or an unplugged communication cable. • The communication is made at MT Developer2 side while SW3RN-SNETP is started (including the online status). When this error occurs, exit from all MELSOFT applications once, and start MT Developer2 again.

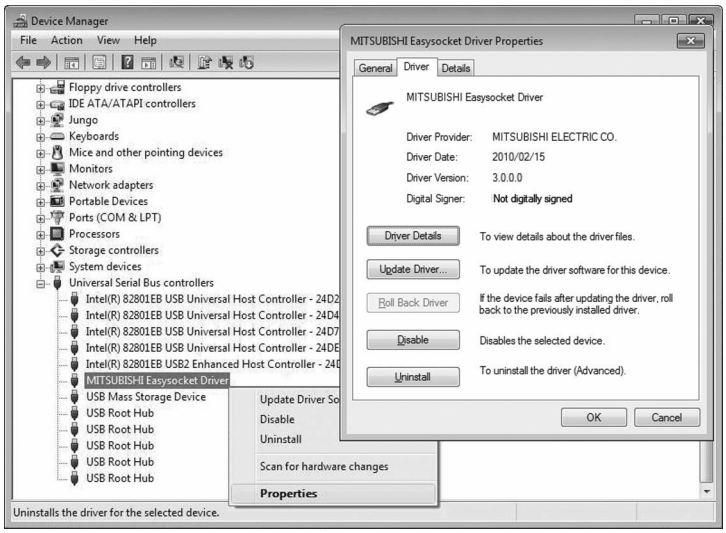
7.7 When SW3RN-SNETP Is Started, "Not enough memory" Error Occurs

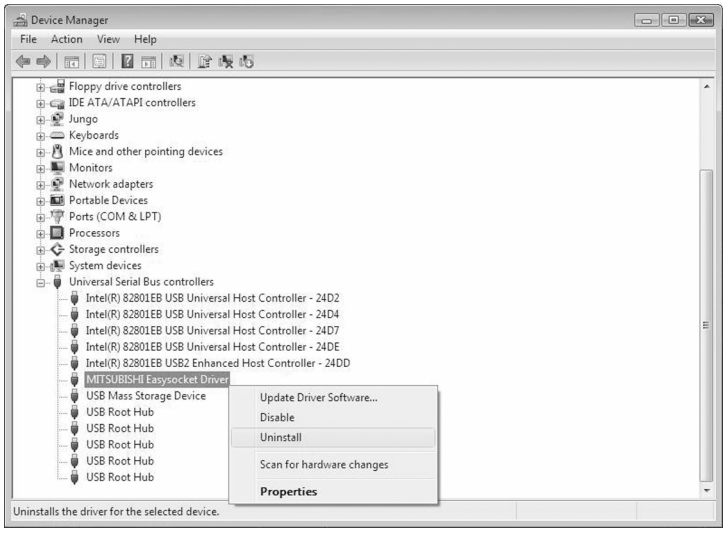
No.	Phenomenon	Cause and remedy
1	When SW3RN-SNETP is started, "Not enough memory" error occurs. 	With MT Developer2 and SW3RN-SNETP started simultaneously, operation to start SW3RN-SNETP or to execute communication may cause a phenomenon shown on the left. To start SSCNET communication by SW3RN-SNETP, exit from MT Developer2 and SW6RN-SNETP once and restart only SW3RN-SNETP. To execute SSCNET communication, make communication with only either one of MT Developer2 or SW3RN-SNETP started.

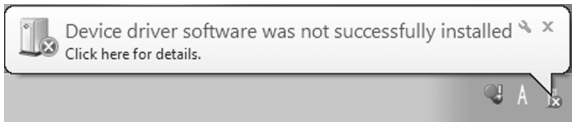
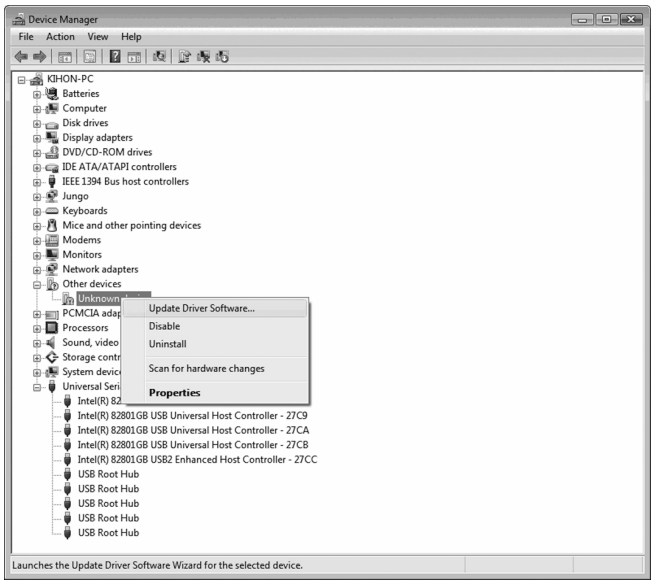
7.8 During USB Communication, the USB Driver Cannot Be Installed or Communication Error Occurs

No.	Phenomenon	Cause and remedy
1	The following error occurs and the USB driver cannot be installed when USB communication is performed with the Motion CPU. <Windows® XP/Windows Vista® is used> <Windows® 7 is used>  	When USB communication is performed in normal mode with a Motion CPU on which the Operating system software has not been installed, the USB driver cannot be installed, and the phenomenon given on the left occurs. If the Operating system software has not been installed, change the Motion CPU to installation mode, and perform USB communication again. The USB driver will be installed. However, when USB communication is performed for the first time under Windows® XP, Windows Vista®, Windows® 7, Windows® 8, Windows® 8.1, it is necessary to install the USB driver. Refer to the following for the setting procedure. • For Windows® XP : "5.1.1 Precautions for using USB communication in Windows® XP" • For Windows Vista®: "5.1.2 Precautions for using USB communication in Windows Vista®" • For Windows® 7/Windows® 8/ Windows® 8 .1 : "5.1.3 Precautions for using USB communication in Windows® 7/Windows® 8/Windows® 8.1" (Note-1): Refer to the user manual of each Motion CPU regarding how to deal with the Motion CPU.
2	The following communication error occurs and communication with the CPU cannot be done when USB communication is performed with the Motion CPU. (Error Code = 0x1808502) 	

7.9 USB communication fails with Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1

No.	Phenomenon	Cause and remedy
1	USB communication fails with Windows Vista®/ Windows® 7/Windows® 8/Windows® 8.1	Check the version of the installed USB communication driver. <Occurrence cause 1)> The occurs when installing Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1 incompatible MELSOFT and connecting to the Motion CPU with USB before installing Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1 compatible MELSOFT. <Occurrence cause 2)> The situation may occur when installing MELSOFT and connecting the personal computer to the Motion CPU with USB on the personal computer where multiple Windows are installed. (Example) Drive C: Windows® XP (MELSOFT installed) Drive D: Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1 The communication error occurs when MELSOFT is installed on the Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1 environment of drive D and the USB communication is tried. In this case, the driver for Windows® XP of drive C may have been used. <Checking method> Start the Windows Device Manager while the personal computer is connected to the Motion CPU with USB, right-click "MITSUBISHI Easysocket Driver", and select [Properties]. If "Driver Version" on the "Driver" tab of the properties screen is as followings, the setting applies to the occurrence cause and a communication failure occurs. "2.0.0.0 or earlier when Windows Vista® is used", "3.0.0.0 or earlier when Windows® 7 is used" "4.0.0.0 or earlier when Windows® 8/ Windows® 8.1 is used"  Update the USB driver with Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1-compatible MELSOFT installed following the recovery method shown below. ⬇ To next page

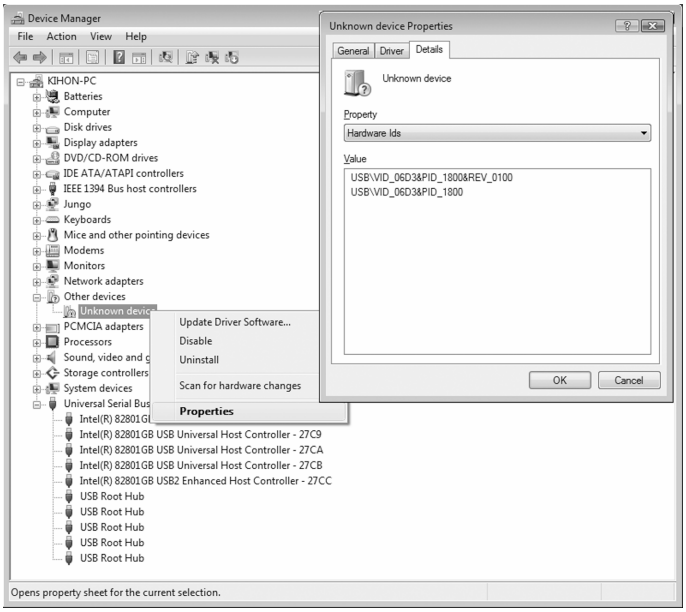
No.	Phenomenon	Cause and remedy
		From preceding page ⬇ (1) Connect the Motion CPU and the personal computer with a USB cable. (2) Start the Device Manager of the OS, right-click "MITSUBISHI Easysocket Driver" as shown below, and choose "Uninstall".Update the USB driver referring to the following items.  (3) The following warning dialog box appears. Check the "Delete the driver software for this device" check box, and select OK. ⬇ To next page

No.	Phenomenon	Cause and remedy
		From preceding page ⬇ (4) Disconnect the USB cable and reconnect it to the same USB port after 5 seconds. (5) The following OS confirmation dialog box appears. <Windows Vista® is used> Click [Ask me again later]. <Windows® 7 is used> The following balloon appears for a little while.  (6) The following screen appears when right-clicking "Unknown device" in the Device Manager of System Tools. Select "Update Driver Software…". < Example: Windows® 7 is used>  ⬇ To next page

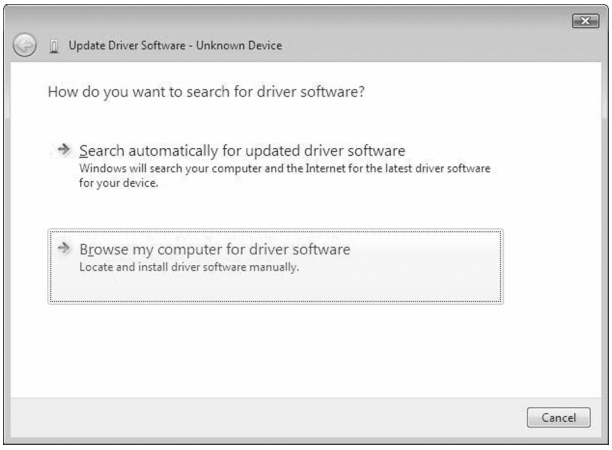
No.	Phenomenon	Cause and remedy
		From preceding page ⬇

Remarks

If multiple "unknown devices" exist therefore cannot be specified, right-click "Unknown device" as shown below and select [Properties].
The "Unknown device", whose "Hardware Ids" is "USB¥VID_06D3&PID_1800" on the "Details" tab of the properties screen, is the update target.

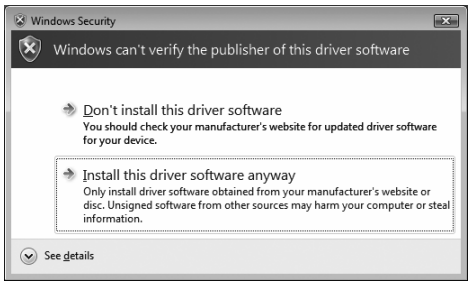


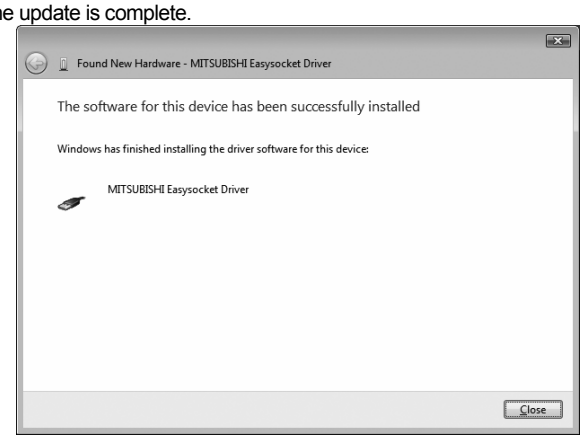
(7) The following OS confirmation dialog box appears.
Click [Browse my computer for driver software].


Update Driver Software - Unknown Device
How do you want to search for driver software?
Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device.
Browse my computer for driver software
Locate and install driver software manually.
Cancel

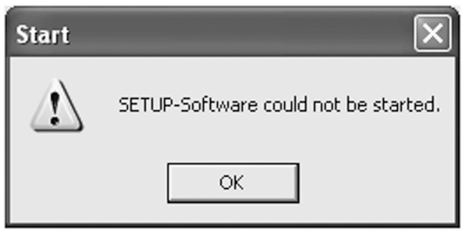
⬇

To next page

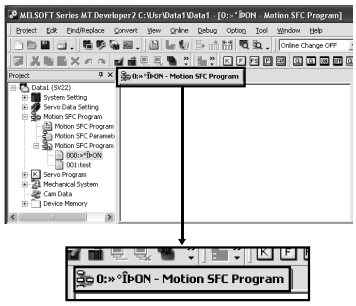
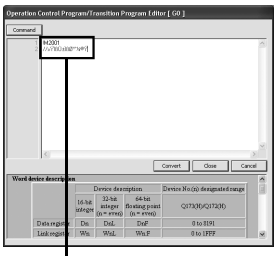
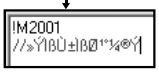
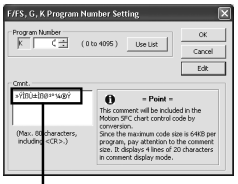
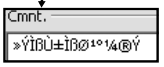
No.	Phenomenon	Cause and remedy
		From preceding page ⬇ (8) The following Windows confirmation dialog box appears. Set the installed location "Easysocket¥USBDrivers" and click Next. Default is set as " C:¥Program Files¥MELSOFT¥Easysocket¥USBDrivers". (9) The following Windows confirmation dialog box appears. <Windows Vista® is used> Click [Install this driver software anyway].  <Windows® 7 is used> Click Install. ⬇ To next page

No.	Phenomenon	Cause and remedy
		From preceding page ⬇ (10) The following OS confirmation dialog box appears. Click Close. The update is complete. 

7.10 MR Configurator Fails to Be Started from MT Developer2 (Linkage Function)

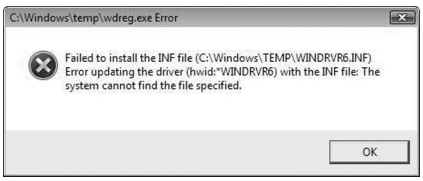
No.	Phenomenon	Cause and remedy
1	When MR Configurator is started from MT Developer2, the following error occurs and the starting fails. (linkage function) 	An MR Configuration version which does not support MT Developer2 is installed. Update the version of MR Configurator to Ver.C1 or later.
2	When MR Configurator is started from MT Developer2, the following error occurs and the starting fails. (linkage function) 	MR Configurator version which does not support Q170M is installed. Update the version of MR Configurator to Ver.C2 or later.

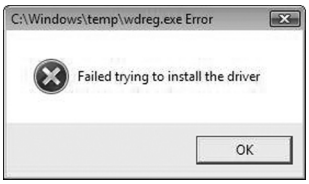
7.11 Operation when Using a Program Data, Created with the Japanese Edition(Note-1) in the English Edition(Note-2)

No.	Phenomenon	Cause and remedy
1	The Motion SFC Program Name Is Not Displayed Correctly.  	This situation occurs when Japanese characters are used. Change the Japanese characters to the ASCII characters with the Japanese edition before opening the project with the English edition. The project may also be opened by deleting the garbled characters and entering characters in the English edition.
2	The motion SFC chart (symbols) comments, or comments in the F/G program are not displayed correctly.    	

(Note-1): MT Developer (SW6RNC-GSVE), MT Developer2
(Note-2): MT Developer2

7.12 When Installation does not Complete or Warning Dialog Boxes are Displayed

<table>
<tr><th>No.</th><th>Phenomenon</th><th>Cause and remedy</th></tr>
<tr><td>1</td><td>The following warning dialog boxes may appear on a Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1-based personal computer.
 

CAUTION
The warning dialog boxes shown above may be hidden behind the screen of MELSOFT installer.
Press Alt + Tab to bring them to front.</td><td>The warning dialog boxes appear when Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1 incompatible driver software is installed to a Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1 compatible personal computer in the either of the following conditions.
<Occurrence condition 1)>
When installing Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1 incompatible MELSOFT.
<Occurrence condition 2)>
When "Reinstall using recommended settings" is selected on the "Program Compatibility Assistant" screen by mistake after installing MELSOFT.

<Corrective action>
Press OK on each warning dialog box and complete the installation.
Perform either of the following corrective actions corresponding to the occurrence condition.

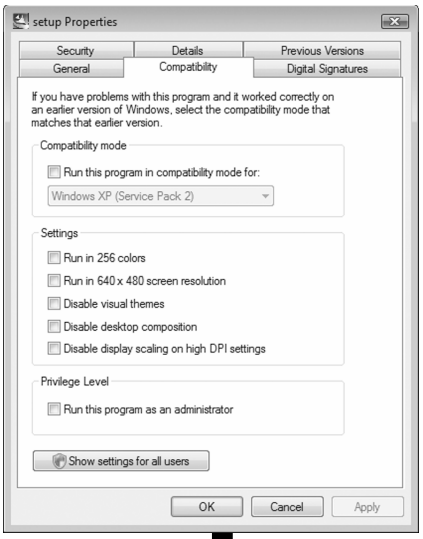
Corrective action for occurrence condition 1):
Install Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1 -compatible software updated version following the procedures below.
• Windows Vista® : "5.1.2 Precautions for using USB communication in Windows Vista®"
• Windows® 7/Windows® 8/Windows® 8.1 : "5.1.3 Precautions for using USB communication in Windows® 7/Windows® 8/Windows® 8.1"
Corrective action for occurrence condition 2):
Reinstall the MELSOFT product.
Ensure to select "This program installed correctly" on the "Program Compatibility Assistant" screen.
Corrective action is described below.
To next page</td></tr>
</table>

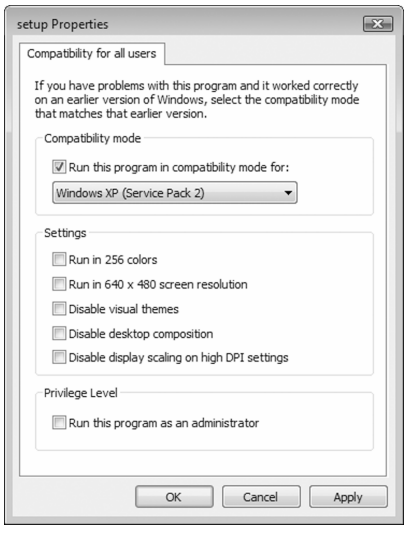
No.	Phenomenon	Cause and remedy
		From preceding page

CAUTION

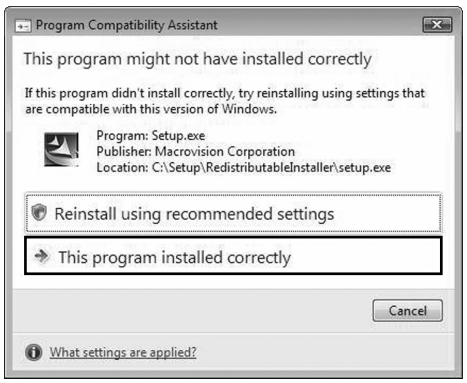
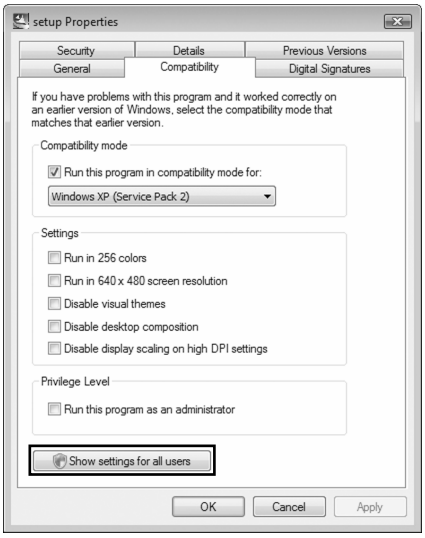
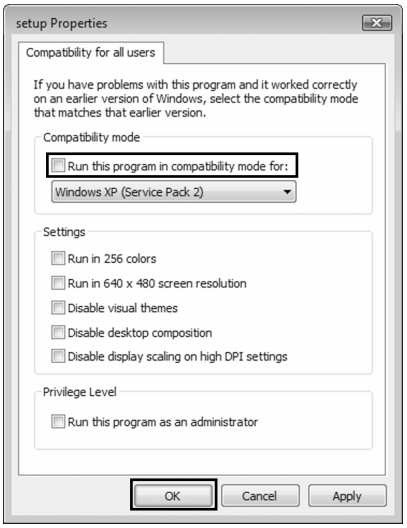
Note the following when the installer is started from the internal hard disk drive.
If "Reinstall using recommended settings" on the "Program Compatibility Assistant" screen is selected by mistake, 'Windows XP compatibility mode' is set automatically. Disable "Windows XP compatibility mode" by the following procedure, and perform the reinstallation.

1). Right-click on the setup.exe icon of the installation target in the Windows explorer, and open the "setup Properties" screen.
2). Select the "Compatibility" tab and click Show settings for all users.
3). Uncheck the "Run this program in compatibility mode for: "check box of compatibility mode in the "Compatibility for all users" tab and click OK.
4). Click OK on the "setup Properties" screen.

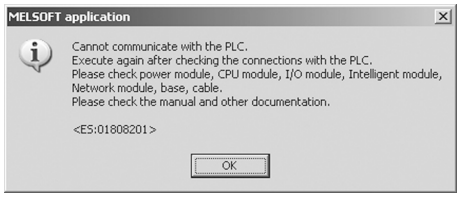

setup Properties
Security
Details
Previous Versions
General
Compatibility
Digital Signatures
If you have problems with this program and it worked correctly on an earlier version of Windows, select the compatibility mode that matches that earlier version.
Compatibility mode
Run this program in compatibility mode for:
Windows XP (Service Pack 2)
Settings
Run in 256 colors
Run in 640 x 480 screen resolution
Disable visual themes
Disable desktop composition
Disable display scaling on high DPI settings
Privilege Level
Run this program as an administrator
Show settings for all users
OK
Cancel
Apply


setup Properties
Compatibility for all users
If you have problems with this program and it worked correctly on an earlier version of Windows, select the compatibility mode that matches that earlier version.
Compatibility mode
Run this program in compatibility mode for:
Windows XP (Service Pack 2)
Settings
Run in 256 colors
Run in 640 x 480 screen resolution
Disable visual themes
Disable desktop composition
Disable display scaling on high DPI settings
Privilege Level
Run this program as an administrator
OK
Cancel
Apply

7.13 A Dialog Box is Displayed after an Installer

No.	Phenomenon	Cause and remedy
1	The following warning dialog boxes may appear on a Windows Vista®/Windows® 7/Windows® 8/Windows® 8.1-based personal computer.  **CAUTION** The warning dialog boxes shown above may be hidden behind the screen of MELSOFT installer. Press Alt + Tab to bring them to front.	<Corrective action> Ensure to select "This program installed correctly". If "Reinstall using recommended settings" is selected by mistake, "Windows XP compatibility mode" is set automatically. Disable "Windows XP compatibility mode" by the following procedure, and perform the reinstallation. 1). Right-click on the setup.exe icon of the installation target in the Windows explorer, and open the "setup Properties" screen. 2). Select the "Compatibility" tab and click Show settings for all users.  3). Uncheck the "Run this program in compatibility mode for: "check box of compatibility mode in the "Compatibility for all users" tab and click OK.  4). Click OK on the "setup Properties" screen.

7.14 When the TCP/IP Communication cannot be Established or the Simulation Function cannot be Started

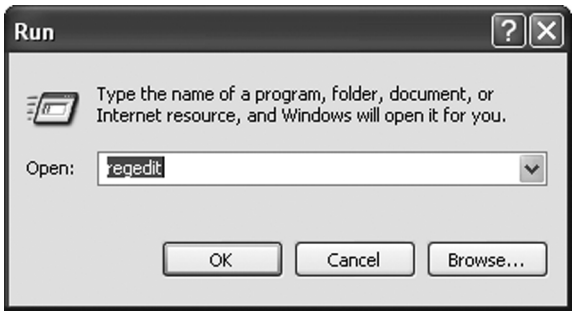
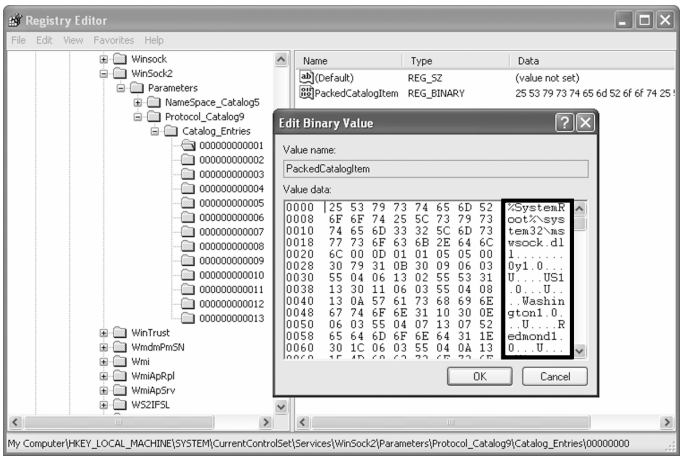
<table>
<tr><th>No.</th><th>Phenomenon</th><th>Cause and remedy</th></tr>
<tr><td>1</td><td>As the TCP/IP communication with the Motion CPU is established or the simulation function is started on MT Works2, the following dialog box may be displayed and the operation may not be able to be performed even if corrective actions against the message are taken.
(Error Code <ES:01808201>)
 
</td><td>The TCP/IP communication function and simulation function of MT Works2 are based on the standard TCP/IP communication provided by Microsoft Corporation. In cases where these functions cannot be started, a communication function of a software product made by another company may adversely affect the standard TCP/IP communication.

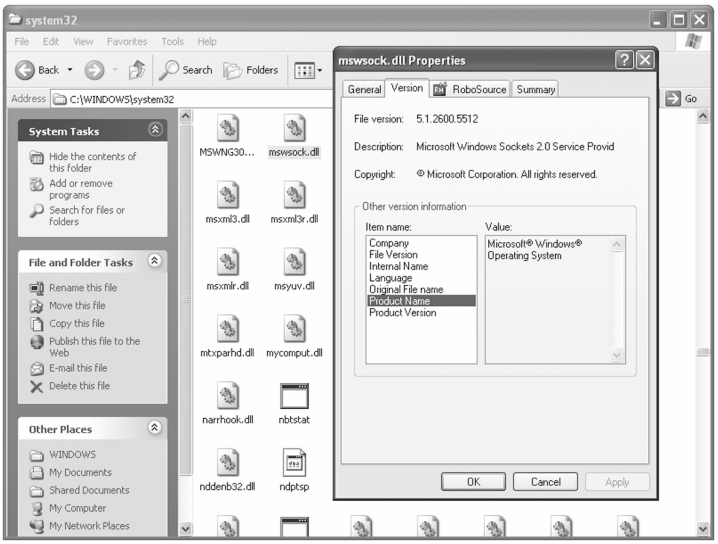
<Corrective action>
This problem can be workarounded by upgrading another company's software product to the latest version or uninstalling it.
For the corresponding software products, refer to the following "Corresponding other companies' software products".

<Corresponding other companies' software products>
(1) Other companies' software products that have been confirmed as causes of this problem
<table>
<tr><th>Manufacturer</th><th>Product name</th><th>Confirmed by (version)</th><th>Corrective action</th></tr>
<tr><td>WILLCOM, Inc.</td><td>Venturi Client for AIR-EDGE</td><td>3.1.2</td><td>Upgrade</td></tr>
<tr><td>Digital Arts Inc.</td><td>i-FILTER</td><td>4.01.08</td><td>Upgrade</td></tr>
<tr><td>SOURCENEXT CORPORATION</td><td>Virus Security ZERO</td><td>9.5.0072</td><td>Uninstall</td></tr>
<tr><td>Sprint Inc.</td><td>Sprint SmartView</td><td>2.25.0046</td><td>Uninstall</td></tr>
</table>
(2) Other companies' software products other than above
In cases where this problem occurs on a personal computer on which any of these software products mentioned above is not installed, follow the following procedure to identify which software product adversely affects the standard TCP/IP communication, and perform upgrade or uninstallation of the software product.

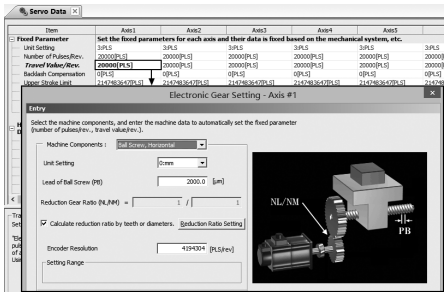
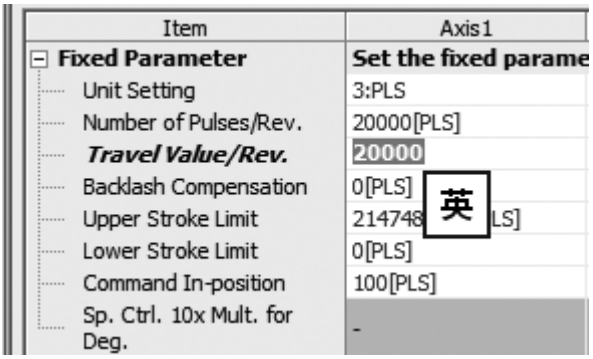
POINT
Registry values are referred in <Checking method> described below.
Be sure not to edit registry values when referring them. The registry is an important component for the operating system. If registry values are erroneously changed, the computer may not work properly.

To next page</td></tr>
</table>

No.	Phenomenon	Cause and remedy
		From preceding page ⬇ <Checking method> 1) Start the Registry Editor on Windows. Click [Run] via [Start], type "regedit" on the displayed dialog box, and click OK.  2) In the Registry Editor, perform the following operation. Under "HKEY_LOCAL_MACHINE¥SYSTEM¥CurrentControlSet¥Services¥WinSock2¥Parameters¥Protocol_Catalog9¥Catalog_Entries", double-click "PackedCatalogItem" in sequentially-numbered registry keys starting from "000000000001", such as "000000000001", "000000000002", "000000000003", and so on.  If a displayed dll file name is other than "mswsock.dll" and "rsvpsp.dll", the dll file likely affects the standard TCP/IP communication. When more than one sequentially-numbered registry key exists, check a dll file name in every registry key. ⬇ To next page

No.	Phenomenon	Cause and remedy
		From preceding page ⬇ 3) Identify a software product made by another company. Identify the product name by opening the properties of the dll file checked in the above step 2 and confirming its "Product Name" and "Description" etc. or by searching for the dll file name on the web. 

7.15 Start the Unexpected Auxiliary Screen in MT Developer2

No.	Phenomenon	Cause and remedy
1	In Windows8.1® (Simplified Chinese), unexpected auxiliary screen might be started on MT Developer2 setting screen when executing numerical entry. (Example) Servo Data Screen Fixed Parameter Item 	<Corrective action> OFF the Chinese (English ON) in IME language preferences. 

APPENDIX 1 Added Functions

The following table shows the functions that are added to MT Developer2.

No.	Description	SV13	SV22	SV43	SV54	Supported version
1	The help jump function by the F1 key is added.	○	○	○	○	1.03D
2	The import multiple CPU parameter function is added.	○	○	○	○	
3	The operability of the monitor function is improved.	○	○	○	○	
4	The operability of the mechanical system program function is improved.	–	○	–	–	
5	The safety observation function is supported. (iQ Platform compatible motion controller with the safety observation function)	○	○	–	–	
6	Q173DCPU/Q172DCPU /Q173HCPU/Q172HCPU/Q173CPU/Q172CPU is supported.	–	–	○	–	
7	The expression and input of decimal comma is supported. (Note-1): Except for motion program of SV43/SV54.	○	○	○	○	
8	Windows® XP Service Pack 3 and Windows Vista® Service Pack 1 are supported.	○	○	○	○	
9	The save function of current value history monitor is added.	○	○	○	○	1.05F
10	The operability of the system setting function is improved.	○	○	○	○	
11	The operability of the motion SFC program function is improved.	○	○	–	–	
12	Q170MCPU is supported.	○	○	–	–	
13	The servo programs CHGA-E/CHGA-C instructions and motion dedicated PLC instruction D(P).CHGA can be displayed on the scroll monitor screen for the Q173DCPU/Q172DCPU. (Note-1): Q170MCPU is supported by Ver.1.05F.	○	○	–	–	1.06G
14	The 0.4ms event task is supported for the Q173DCPU/Q172DCPU.	○	○	–	–	
15	The MR-J3-B DD motor is supported for the Q173DCPU/Q172DCPU. (Note-1): Q170MCPU is supported by Ver.1.05F.	○	○	○	–	
16	The CPU built-in I/F (I/O signal (DI/DO)) function is supported for the Q170MCPU.	○	○	–	–	
17	The CPU built-in I/F (manual pulse generator/INC synchronous encoder) function is supported for the Q170MCPU.	○	○	–	–	
18	The mark detected function is supported for the Q170MCPU.	○	○	–	–	
19	The MC protocol communication is supported for the Q170MCPU.	○	○	–	–	
20	The advanced S-curve acceleration/deceleration function is supported for the Q173DCPU/Q172DCPU/Q170MCPU. (Note-1): Except for constant speed control of the servo program (CPSTART instruction).	○	○	–	–	
21	The message displayed when rewriting the data processing processor OS of Q173HCPU/Q172HCPU/Q173CPU/Q172CPU, which supports the data processing processor OS, is improved.	○	○	○	○	
22	The CPU information screen is added. When connecting CPU, you can start from the menu [Help] → [CPU Information].	○	○	○	○	
23	The label input assist function is added for the Q173DCPU/Q172DCPU/ Q170MCPU projects. Target: Motion SFC Program, Servo Program, Mechanical System Program	○	○	–	–	
24	The cross reference function is added for the Q173DCPU/Q172DCPU/ Q170MCPU projects. Target: Label Editor, Motion SFC Program, Servo Program, Mechanical System Program	○	○	–	–	
25	The find device function is added for the mechanical system program.	–	○	–	–	
26	The label specification is enabled for the mechanical system program of the Q173DCPU/Q172DCPU/Q170MCPU projects.	–	○	–	–	
27	Copying between projects is enabled for the limit switch data.	○	○	○	○	
28	Changing CPU type and diverting are enabled from Q173DCPU/Q172DCPU/ Q170MCPU projects to Q173HCPU/Q172HCPU/Q173CPU/Q172CPU projects.	○	○	–	–	

○: Supported –: Not supported

No.	Description	SV13	SV22	SV43	SV54	Supported version
29	The simulation function is added for the Q173DCPU/Q172DCPU.	○	○	–	–	1.09K
30	Q173HCPU/Q172HCPU/Q173CPU/Q172CPU is supported.	–	–	–	○	
31	The GOT transparent function via Ethernet module is supported for Q170MCPU. (Note-1): PERIPHERAL I/F connector of Q170MCPU is not supported.	○	○	–	–	
32	The GOT transparent function via Ethernet is supported for Q173DCPU/ Q172DCPU.	○	○	○	–	
33	The advanced S-curve acceleration/deceleration function in the servo program (constant speed control: CPSTART instruction) is supported for Q173DCPU/ Q172DCPU/Q170MCPU.	○	○	–	–	
34	The Division setting function is added for the digital oscilloscope.	○	○	○	○	
35	The writing to/reading from CPU function of the cam edit data is added for Q173DCPU/Q172DCPU/Q170MCPU projects, and editing cam data in MT Developer2 by the cam data read from the motion CPU is enabled.	–	○	–	–	
36	The system label function in MELSOFT iQ Works is supported for the Q173DCPU/Q172DCPU projects.	○	○	–	–	
37	The parameter interaction function of MELSOFT iQ Works is supported.	○	○	○	–	
38	MELSOFT iQ Works (Ver.1.05F) is supported.	○	○	○	–	
39	The compress/unpack function of the project data is added.	○	○	○	○	
40	The screen style and toolbar icon are changed.	○	○	○	○	
41	The backup and load of the motion error history with the CPU backup function are enabled for the Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	
42	The motion controller dedicated device help is added for the Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	
43	Unpacking by dragging and dropping project compressed files is supported.	○	○	○	○	
44	The interaction function with MR Configurator2 is supported.	○	○	○	○	
45	Windows Vista® Service Pack 2 is supported.	○	○	○	○	1.15R
46	The organization of HELP contents was modified as to improve its visualization.	○	○	○	○	
47	The setup guidance is added to the start menu.	○	○	○	○	
48	Data for GX Works2 is added as a sample data of Q170MCPU.	○	○	–	–	
49	The movement average is added to the operation setting of the device dump for the digital oscilloscope.	○	○	○	○	
50	The assistant function is added for the digital oscilloscope.	○	○	○	○	
51	The motion controller dedicated device help is added for the Q173HCPU/ Q172HCPU/Q173CPU/Q172CPU.	○	○	○	○	
52	The motion controller dedicated device help is added for the Q173DCPU/ Q172DCPU. (Note-1): This is added in Ver.1.09K for Q173DCPU/Q172DCPU/Q170MCPU SV13/SV22.	○	○	○	–	
53	The changing of the system setting (except automatic refresh setting) and servo data setting is supported for changing CPU type and diverting from Q173DCPU/ Q172DCPU/Q170MCPU projects to Q173HCPU/Q172HCPU projects.	○	○	○	–	
54	The backup and load of the motion error history with the CPU backup function are enabled for the Q173DCPU/Q172DCPU. (Note-1): This is added in Ver.1.09K for the Q173DCPU/Q172DCPU/Q170MCPU SV13/SV22.	○	○	○	–	
55	The DFLT instruction and SFLT instruction are added to the operation control program and transition program of the motion SFC program for the Q173DCPU/ Q172DCPU/Q170MCPU.	○	○	–	–	
56	Labels can be used at the motion SFC parameter execution flag for the Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	
57	The count type home position return method using the external signals of amplifier is enabled for the Q173DCPU/Q172DCPU.	○	○	–	–	
58	The scale home position signal detection type is added to the home position return method for the Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	
59	The operability of the servo data setting function is improved.	○	○	○	○	
60	Connection with the AC servo driver (VC II Series) for DD motor made by Nikki Denso Co., Ltd. is supported for the Q173DCPU/Q172DCPU/Q170MCPU.	○	○	○	–	

○: Supported –: Not supported

No.	Description	SV13	SV22	SV43	SV54	Supported version
61	FR-A700 is supported for the Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	1.15R
62	The GOT transparent function via CPU built-in PERIPHERAL I/F is supported for the Q173DCPU-S1/Q172DCPU-S1/Q170MCPU.	○	○	–	–	
63	The Ethernet transfer setting and MC protocol in the CPU built-in PERIPHERAL I/F is supported for the Q173DCPU-S1/Q172DCPU-S1.	○	○	–	–	
64	Connection with the vision system made by Cognex Corporation is supported.	○	○	–	–	
65	Microsoft® Windows® 7 is supported.	○	○	○	○	1.17T
66	The real-time display function of Digital Oscilloscope is added for the Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	
67	Capacity calculation function of labels/structure data to be written in the memory card is added for the Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	
68	Device Comment function is added. (Note-1): Device comment data cannot be written to the Motion CPU. It is available only on project data.	○	○	–	–	
69	Option to display all folders is added in the "Open Project" dialog box, which enables to open projects not controlled in the workspace.	○	○	○	○	
70	Microsoft® Windows® 7 (For 64-bit edition) is supported. Microsoft® Windows® 7 Service Pack 1 is supported.	○	○	○	–	1.19V
71	The GOT transparent function for connecting GOT and a personal computer by the Ethernet is supported.	○	○	○	○	
72	The multiple CPU high speed main base unit with 5 slot (Q35DB) is supported for the Q173DCPU/Q172DCPU.	○	○	○	–	
73	A project of the motion controller A series created in SW3RNC-GSVE can be diverted to a project of the motion controller Q series.	○	○	–	–	1.39R
74	Q170MCPU is supported. (Note-1): SV13 and SV22 are already supported by Ver.1.05F.	○	○	○	–	
75	Q173DSCPU and Q172DSCPU are supported.	○	○	–	–	
76	The simulation function is added for the Q173DSCPU/Q172DSCPU.	○	○	–	–	
77	The axis label function is added for the Q173DSCPU/Q172DSCPU.	○	○	–	–	
78	The software security key function is added for the Q173DSCPU/Q172DSCPU.	○	○	–	–	
79	The electronic gear setting function is added for the Q173DSCPU/Q172DSCPU/ Q173DCPU/Q172DCPU/Q170MCPU/Q173HCPU/Q172HCPU.	○	○	○	–	
80	The project verification function is added.	○	○	○	○	
81	The verification function with the motion CPU is improved.	○	○	○	○	
82	The operability of the servo program editing is improved.	○	○	–	–	
83	The operability of the project tree is improved.	○	○	–	–	
84	The cross reference function can be used for all CPU projects.	○	○	○	–	
85	The program control instructions (IF to ELSE to IEND, SELECT to CASE to SEND, FOR to NEXT, BREAK) are added to the operation control program and transition program of the motion SFC program for the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	
86	The vision system dedicated function, MVOUT instruction, is added to the operation control program and transition program of the motion SFC program for the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	
87	The operability of the device batch monitor is improved.	○	○	○	○	
88	The operability of the device test is improved.	○	○	○	○	
89	The watch function is added.	○	○	○	○	
90	The operability of the execute step monitor and specified step monitor is improved.	○	○	–	–	
91	The single file format project is supported in addition to the conventional workspace format project in the project opening/saving function.	○	○	○	○	
92	The revision function is added.	○	○	○	○	
93	The project batch conversion function is added.	○	○	○	–	

○: Supported –: Not supported

No.	Description	SV13	SV22	SV43	SV54	Supported version
94	The operability of label editor in the Q173DSCPU/Q172DSCPU/Q173DCPU/ Q172DCPU/Q170MCPU was improved. • Added sort function. • Added undo/redo function. • Added CSV file import/export function. • Hold the structure member status when changing the label name which used structure.	○	○	–	–	1.39R
95	Added the function which batch-replaces program device No. to label name in the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/Q170MCPU.	○	○	–	–	
96	The operability of optional data monitor in the Q173DSCPU/Q172DSCPU/ Q173DCPU/Q172DCPU/Q170MCPU/ Q173HCPU/Q172HCPU was improved.	○	○	○	○	
97	The target parameter converting function below is added when executing the following operation for the Q173DSCPU/Q172DSCPU/Q173DCPU/Q172DCPU/ Q170MCPU/Q173HCPU/Q172HCPU. • File diversion, CPU/OS type changing and basic setting (SSCNET setting) changing [Target parameter] • Electronic gear (Number of pulses per revolution, travel value per revolution) • Servo parameter (from MR-J2S-B to MR-J3-B, from MR-J2S-B to MR-J4-B, or from MR-J3-B to MR-J4-B)	○	○	○	–	1.42U
98	The MR-J4(W)-B fully closed is supported for the Q173DSCPU/Q172DSCPU.	○	○	–	–	1.47Z
99	The monitor function is improved.	○	○	○	–	
100	The advanced synchronous control method is supported for the Q173DSCPU/Q172DSCPU.	–	○	–	–	
101	MELSOFT iQ Works (Ver.1.43V) is supported.	○	○	○	–	1.52E
102	The simulation function in the advanced synchronous control method is added for the Q173DSCPU/Q172DSCPU.	–	○	–	–	
103	The unused operation control programs and transition programs in Motion SFC program can be displayed in project tree.	○	○	–	–	
104	The operability of the mark detection function is improved.	○	○	–	–	
105	While executing Motion SFC program monitor, cross reference can be executed.	○	○	–	–	
106	The initial mode while executing Motion SFC program monitor was changed to the specified step monitor mode.	○	○	–	–	
107	The display can jump to the corresponding part from the verify result of cam in advanced synchronous control method.	–	○	–	–	
108	Q170MSCPU/Q170MSCPU-S1 is supported.	○	○	–	–	1.56J
109	Universal model high speed type (Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, Q26UDVCPU) is supported.	○	○	–	–	
110	SSCNET III/H head module (LJ72MS15) is supported in Q173DSCPU/Q172DSCPU/Q170MSCPU/Q170MSCPU-S1.	○	○	–	–	
111	The intelligent function module is supported for the Q173DSCPU/Q172DSCPU/Q170MSCPU/Q170MSCPU-S1.	○	○	–	–	
112	Acceleration/deceleration time specification at speed changing is supported in Q173DSCPU/Q172DSCPU/Q170MSCPU/Q170MSCPU-S1.	○	○	–	–	
113	Dog-less home position signal reference type is added to home position return method for the Q173DSCPU/Q172DSCPU/Q170MSCPU/Q170MSCPU-S1.	○	○	–	–	
114	Connection with the AC servo driver (VC II Series) for DD motor made by Nikki Denso Co., Ltd. via SSCNET III/H is supported for the Q173DSCPU/Q172DSCPU/Q170MSCPU/Q170MSCPU-S1.	○	○	–	–	
115	The setting range of backlash compensation is extended for the Q173DSCPU/Q172DSCPU/Q170MSCPU/Q170MSCPU-S1.	○	○	–	–	
116	Multiple CPU synchronous control is supported for the Q173DSCPU/Q172DSCPU (advanced synchronous control method).	–	○	–	–	
117	Operation method per cycle is added to pulse input simulator function for the simulator of Q173DSCPU/Q172DSCPU.	○	○	–	–	
118	It has been improved that mechanical system program, synchronous control parameter and cam data can be copied (drag and drop) between projects.	–	○	–	–	

○: Supported –: Not supported

No.	Description	SV13	SV22	SV43	SV54	Supported version
119	The cross reference function support the system setting and servo data setting.	○	○	○	–	1.56J
120	It has been improved that multiple digital oscilloscope can be started at one time.	○	○	○	○	
121	The characters can be input is extended up to 256 when save digital oscilloscope file.	○	○	○	○	
122	The register method of optional device in probe setting for digital oscilloscope has been improved.	○	○	○	○	
123	It is supported for Microsoft® Windows® 8 (32-bit /64-bit)	○	○	○	○	1.62Q
124	It has been improved that the cam data which created by imported CSV file can be displayed in the program tree after writing the cam data that created by imported CSV file to CPU during the CPU reading.	–	○	–	–	
125	Clutch mode is supported in the mechanical system program.	–	○	–	–	
126	The operability of the find/replace function is improved.	○	○	–	–	1.68W
127	It has been improved that the mechanical system program of virtual mode switching method can be converted/diverted to the synchronous control parameter of advanced synchronous control method.	–	○	–	–	
128	Free curve is added in the cam data for advanced synchronous control method of Q173DSCPU/Q172DSCPU/Q170MSCPU(-S1).	–	○	–	–	
129	Synchronous encoder via servo amplifier is supported in the advanced synchronous control method of Q173DSCPU/Q172DSCPU/Q170MSCPU(-S1).	–	○	–	–	
130	Data type conversion function (SHORT, LONG, DFLOAT) is added in the motion program of Q173DCPU/Q172DCPU/Q170MCPU.	–	–	○	–	
131	Fixed position stop instruction (G34, G35) is added in the motion program of Q173DCPU/Q172DCPU/Q170MCPU.	–	–	○	–	
132	Stop position can be specified by high-speed oscillation instruction (G26) of motion program in Q173DCPU/Q172DCPU/Q170MCPU.	–	–	○	–	
133	Residual travel value can be monitored in Q173DCPU/Q172DCPU/Q170MCPU.	–	–	○	–	
134	Residual travel value can be specified in probe of digital oscilloscope in Q173DCPU/Q172DCPU/Q170MCPU.	–	–	○	–	
135	GOT transparent that GOT2000 has been used is supported.	○	○	○	○	
136	Microsoft® Windows® 8.1 (32-bit/64-bit edition) is supported.	○	○	○	○	1.70Y
137	MELSEC iQ-R Series R32MTCPU/R16MTCPU is supported.	○*1		–	–	1.100E
138	The interaction function with MR Configurator2 is improved.	○	○	○	–	
139	Safety communication parameter is added in safety observation function of Q173DSCPU/Q172DSCPU.	○	○	–	–	
140	Language switching (Japanese/English) is enabled.	○	○	○	○	
141	The operability of the list of used device is improved.	○	○	○	○	
142	The operability of the file in digital oscilloscope is improved.	○	○	○	○	

○: Supported –: Not supported

*1: There is no OS class in MELSEC iQ-R series. For convenience, this text explains on class column of OS.

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WARRANTY

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company.
However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing on-site that involves replacement of the failed module.

[Gratis Warranty Term]

The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place. Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

[Gratis Warranty Range]

(1) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.
(2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
   1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
   2. Failure caused by unapproved modifications, etc., to the product by the user.
   3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
   4. Failure that could have been avoided if consumable parts (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
   5. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
   6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
   7. Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

2. Onerous repair term after discontinuation of production

(1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued. Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.
(2) Product supply (including repair parts) is not available after production is discontinued.

3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation of damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

5. Changes in product specifications

Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

6. Precautions for Choosing the Products

(1) For the use of our Motion controller, its applications should be those that may not result in a serious damage even if any failure or malfunction occurs in Motion controller, and a backup or fail-safe function should operate on an external system to Motion controller when any failure or malfunction occurs.

(2) Our Motion controller is designed and manufactured as a general purpose product for use at general industries. Therefore, applications substantially influential on the public interest for such as atomic power plants and other power plants of electric power companies, and also which require a special quality assurance system, including applications for railway companies and government or public offices are not recommended, and we assume no responsibility for any failure caused by these applications when used.
In addition, applications which may be substantially influential to human lives or properties for such as airlines, medical treatments, railway service, incineration and fuel systems, man-operated material handling equipment, entertainment machines, safety machines, etc. are not recommended, and we assume no responsibility for any failure caused by these applications when used.
We will review the acceptability of the abovementioned applications, if you agree not to require a specific quality for a specific application. Please contact us for consultation.

IB(NA)-0300142-R(1406)MEE

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Specifications subject to change without notice.